



BLUE ROCK  
ENVIRONMENTAL, INC.

FILE COPY

Mr. Mark Verhey  
Humboldt County Division of Environmental Health  
100 H Street, Suite 100  
Eureka, California 95501

July 13, 2005

**Re: Second Quarter 2005 Groundwater Monitoring and  
Remedial System Operations Report**  
Former Central BP Station  
2160 Central Avenue  
McKinleyville, California  
**LOP # 12692**  
**Blue Rock Project No. NC-24**

Dear Mr. Verhey,

This report presents the results of the Second Quarter 2005 groundwater monitoring and soil vapor extraction (SVE) operational data for activities performed at the Former Central BP Station located at 2160 Central Avenue in McKinleyville, Humboldt County, California. (site) (Figure 1). The report was prepared for the Louise Pierson Revocable Trust by Blue Rock Environmental, Inc. (Blue Rock).

### **Background**

#### Site Description

The former Central BP Service Station is located in the unincorporated town of McKinleyville, California (Figure 1). The site is level and gravel surfaced, and the lot is approximately 0.5-acre. All former service station structures, including the fueling system, have been removed. The site is approximately 150 feet above mean sea level. Nearby property use is commercial.

#### Site and UST History

The Louise Pierson Trust has owned the property since 1956. A service station was constructed on the site in 1959. The original station included one 1,000-gallon used oil, two 5,000-gallon gasoline, and one 10,000-gallon gasoline underground storage tanks (USTs). In 1972, the station was remodeled, which included relocating the 1,000-gallon used oil tank 15 feet to the west, and installation of an additional 2,000-gallon gasoline UST was installed on the west side of the existing USTs.

In November 1990, the used oil tank and the 2,000-gallon UST were removed from the site. In August 1991, SHN Consulting Engineers excavated approximately 40 cubic yards of impacted soil from the 2,000-gallon UST pit.

In August 1998, Albers Construction of Eureka, California removed the remaining 5,000-gallon and 10,000-gallon USTs and overexcavated approximately 340 cubic yards of contaminated soil. Additionally, 200 cubic yards of contaminated tank fill was removed, remediated on site, and backfilled into the excavation per HCDEH approval. Soil samples collected from the UST excavations contained detectable levels of gasoline range hydrocarbons.

#### Site Investigation History

Site investigation has been ongoing since July 1999. A total of approximately 15 borings (B-1 through B-4, B-A through B-H, and SVB-1 through SVB-3) have been drilled and 12 monitoring wells (MW-1 through MW-12) installed at the site (Figure 2). Also, six vapor extraction wells (VEW-1 through VEW-6) and six air-sparge wells (SW-1 through SW-6) have been installed at the site (Figure 2). A summary of well construction details are included in Table 1 and cumulative groundwater monitoring data are included in Table 2.

#### Hydrogeology

The site appears to be underlain by sandy silt to a depth of at least 30 feet bgs, the maximum depth explored. Groundwater appears to occur in unconfined conditions with depth to water fluctuating between approximately 7 to 19 feet over the span of the annual hydrologic cycle. Groundwater flow direction has ranged from northwest, northeast, to east.

#### Contaminant Type

The predominant contaminants detected in the subsurface around the former UST system consist of total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethyl-benzene, xylene (BTEX). Low levels of fuel oxygenates (i.e. MTBE) and TPH as diesel (TPHd), relative to TPHg, have also been detected.

#### Remediation History

In April 2004, Sustainable Technologies of Alameda, California installed a soil vapor extraction/air sparge system (SVE/AS), which consisted of a grid of six vapor extraction and six air-sparge wells plumbed to a catalytic oxidizer and sparge blower. The SVE/AS system became operational in July 2004.

#### **Field and Laboratory Activities**

##### Groundwater Monitoring Activities

On June 14, 2005, twelve wells (MW-1 to MW-12) were gauged and were sampled.

Prior to sampling, an electronic water level indicator was used to gauge depth to water in each well, accurate to within  $\pm 0.01$ -foot. All wells were checked for the presence of light non-aqueous phase liquid (LNAPL) petroleum prior to purging. No measurable thicknesses of LNAPL were observed on groundwater in any of the wells.

In preparation for sampling, the wells were purged of groundwater until sampling parameters (temperature, pH, and conductivity) stabilized. A downhole Dissolved Oxygen (DO) meter was used to measure DO concentrations in groundwater after the wells were purged. DO concentrations recorded this quarter are listed in the text below.

Following recovery of water levels to at least 80% of their static levels in the other wells, groundwater samples were collected from the wells using disposable polyethylene bailers and transferred to laboratory supplied containers. Sample containers were labeled, documented on a chain-of-custody form, and placed on ice in a cooler for transport to the project laboratory.

Purging instruments were cleaned between use by an Alconox® wash followed by double rinse in clean tap water to prevent cross-contamination. Purge and rinseate water was stored on-site in labeled 55-gallon drums pending future removal and disposal.

Groundwater monitoring and well purging information is presented on Gauge Data/Purge Calculations and Purge Data sheets (attached).

#### Groundwater Sample Analyses

Groundwater samples were analyzed by Kiff Analytical (Kiff), a DHS-certified laboratory, located in Davis, California, for the following analytes:

- TPHd by EPA Method 3510/8015M.
- TPHg, BTEX, MTBE by EPA Method 5030/8260B.

#### **Groundwater Monitoring Results**

##### Groundwater Flow Direction and Gradient

Static groundwater in the wells was present beneath the site at depths ranging from approximately 11.18 (MW-10) to 14.26 (MW-6) feet bgs. Gauging data, combined with well elevation data, were used to calculate groundwater elevations, and to generate a groundwater elevation and gradient map. The groundwater flow direction was calculated to be toward the east-northeast, north, and northwest at gradients ranging from 0.019 ft/ft to 0.009 ft/ft (Figure 3). Historic groundwater flow direction and gradient are shown in Figure 4. The groundwater gradient and flow direction for this quarter is consistent with previous measurements.

##### Groundwater Contaminant Analytical Results

LNAPL:	None
TPHd concentration:	<50 µg/L (MW-2, 3, 4, 9, 10, 11, 12) to <3,000 µg/L (MW-7)
TPHg concentration:	<50 µg/L (MW- 1, 2, 3, 4, 8, 9, 10, 11) to 16,000 µg/L (MW-7)
Benzene concentration:	<0.50 µg/L (MW-1, 2, 3, 4, 6, 9, 10, 11, 12) to 250 µg/L (MW-5)
MTBE Concentration:	<0.50 µg/L (MW-1, 2, 3, 4, 6, 9, 10, 11, 12) to 6.5 µg/L (MW-5)

Groundwater sample analytical results are shown graphically on Figure 5 cumulative groundwater sample analytical results are summarized in Table 2. Copies of the laboratory report and chain-of-custody form are attached.

The extent of dissolved-phase contamination remains delineated. The magnitude and distribution of dissolved-phase contaminants detected during this event have diminished compared to previous sampling events. Dissolved oxygen concentrations in groundwater ranged from 1.54 mg/L (MW-6) to 10.35 mg/L (MW-2).

### **Soil Vapor Extraction System**

#### Background

The soil vapor extraction system design includes six wells plumbed for vapor extraction VEW-1 to VEW-6 (Figure 6). The remediation system was constructed in April 2004 in accordance with Clearwater's *RAP* dated September 3, 2003. The system was tested on July 6 through July 9, 2004 for initial compliance testing according to the North Coast Unified Air Quality Management District (NCUAQMD) authority to construct (ATC) permit #NAC-380 (Attached). Effluent results of the verification testing indicated that the system was operating within compliance of the permit. Thus, according to the ATC permit weekly compliance monitoring was initiated. The interval for the monitoring of the system and the collection influent and effluent air samples was reduced to monthly from weekly beginning in August 2004 as system compliance with the NCUAQMD ATC permit had been demonstrated.

#### Operational Data

Petroleum hydrocarbon vapors extracted from soil and groundwater are treated by a 250 scfm Solleco 250 ECAT catalytic oxidizer (catox).

In accordance with the NCAQMD ATC permit, the influent and effluent air streams for the catox unit were analyzed for contaminant concentrations (TPHg, BTEX and MTBE) during the first four days of startup and weekly thereafter. Sampling intervals were changed to monthly once compliance had been demonstrated. Catox operational data and analytical results for influent and effluent samples, and compliance data are presented on Tables 3, 4, 5 and 6. The soil vapor extraction process flow diagram is shown on Figure 7. Individual vapor well analytical results of vapor samples collected from the catox influent streams, during startup of the system in July 2004 are presented on Table 3. The following is a summary of the operational data and analytical results of samples from the soil vapor extraction process stream for this monitoring period:

• Monitoring Initiation:	System was started on July 6, 2004
• Period of Operation:	March 22, 2005 to June 9, 2005
• Monitoring Dates:	5/9/05, 6/9/05
• Total Operational Hours:	5,520 hours to date
• Period Operational Hours:	955 Hours
• Period System running time:	50%
• Period Average influent air flow rate:	233 scfm
• Period Average influent air TPHg:	685 mg/m <sup>3</sup>
• Period Average effluent air TPHg:	<20 mg/m <sup>3</sup>
• Period Average Destruction efficiency:	96.5%,
• Period Average TPHg recovery rate:	17.62 lb/day
• Total TPHg recovery:	8,549 lb (1,406 gal) to date
• Operating wells:	VEW-3 through VEW-6
• Analytes tested:	TPHg, BTEX, MTBE
• Analytical methods:	EPA Method 8260B
• Laboratory:	Kiff Analytical LLC, Davis, California

The TPHg recovery rate is based on analytical influent air sample results and concurrently measured air flow. The average TPHg recovery rate for each month is multiplied by hours of operation for that period to calculate TPHg removal for the period between each sampling event.

### Air Sparge System

#### Background

The air sparge injection system design includes five wells plumbed for sparging: SW-1 to SW-6 (Figure 8). The air sparge system was constructed in April 2004.

#### Operational Data

• Startup date:	Started on December 1, 2004
• Operational time:	On 24 hrs / day 7 days / week, off with SVE system shutdown
• Injection air flow rate:	Approximately 3 scfm

The air sparge system was started following the installation of interlocks between the SVE and Sparge systems in early December 2004. The sparge system was subsequently shut down in mid December due to the added influent hydrocarbon concentrations originating from sparge system operation causing the system to shut down. When influent concentrations from SVE system operation began to diminish, the sparge system was restarted to address residual dissolved hydrocarbons.

### **Remedial System Status**

The soil vapor extraction system is configured to concentrate extracting vapor from wells VEW-1 to VEW-6. The catox has been in operation since July 6, 2004. The soil vapor extraction system is operating as designed, recovering hydrocarbon vapor from the area of soil contamination at significant rates. An estimated 8,549 lbs. (1,406 gal.) of hydrocarbons have been recovered from the subsurface. The SVE / Sparge system experienced a high percentage of down-time between March 6 and May 6, 2005, which was traced to the failure of the electric motor for the blower. The motor was repaired on May 6, 2005. The system was subsequently restarted on May 9, 2005. Blue Rock recommends continued operation of the vapor extraction remediation system as designed. Sparge system operation has been resumed.

### **Project Status and Recommendations**

- The site is currently being monitored on a quarterly basis per the HCDEH directive directives. The next quarterly sampling event is scheduled for September 2005. Groundwater samples are currently analyzed for TPHd, TPHg, BTEX, and MTBE.
- The SVE / air sparge system should continue operation as designed. The next influent / effluent sampling event is scheduled for July 2005.

### Certification

This report was prepared under the supervision of a California Professional Geologist at Blue Rock. All statements, conclusions, and recommendations are based upon published results from past consultants, field observations by Blue Rock, and analyses performed by a state-certified laboratory as they relate to the time, location, and depth of points sampled by Blue Rock. Interpretation of data, including spatial distribution and temporal trends, are based on commonly used geologic and scientific principles. It is possible that interpretations, conclusions, and recommendations presented in this report may change, as additional data become available and/or regulations change.

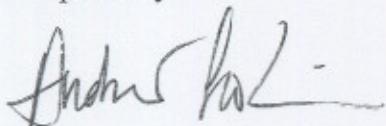
Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

The service performed by Blue Rock has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

If you have any questions regarding this project, please contact us at (707) 441-1934.

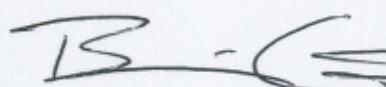
Sincerely,  
Blue Rock Environmental, Inc.

Prepared by:

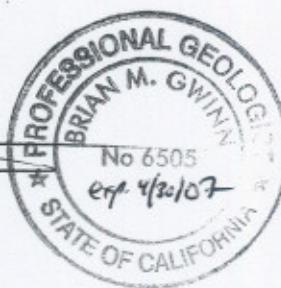


Andrew LoCicero  
Project Scientist

Reviewed by:



Brian Gwinn, P.G.  
Principal Geologist



Attachments:

- Table 1: Well Construction Details
- Table 2: Groundwater Elevations and Sample Analytical Results
- Table 3: SVE Air Sample Analytical Results
- Table 4: SVE Operational Data
- Table 5: SVE System APCD Compliance Data
- Table 6: Calculations for Hydrocarbon Emissions
- Figure 1: Site location Map
- Figure 2: Site Plan
- Figure 3: Groundwater Elevation and Gradient Map – 6/14/05
- Figure 4: Cumulative Groundwater Flow Direction and Gradient 6/99 – 6/05
- Figure 5: Dissolved-Phase Hydrocarbon (TPHg) Distribution – 6/14/05
- Figure 6a: SVE Layout and Radius of Influence (VEW-1, 3, 5)
- Figure 6b: SVE Layout and Radius of Influence (VEW-2, 4, 6)
- Figure 7: Catox and Well Manifold Schematic
- Figure 8: Sparge Blower and Well Manifold Schematic
- Blue Rock Gauge/Purge Calculations Well Purging Data field sheets and SVE O&M Forms
- Laboratory Analytical Reports and Chain-of-Custody Forms
- North Coast Unified Air Quality Management District Authority to Construct Permit

Distribution:

Mr. Greg Pierson, Louise Pierson Revocable Trust, 1200 W. Harris Street, Eureka, CA 95503

Mr. Al Steer, North Coast Unified Air Quality Management District, 2300 Myrtle Ave. Eureka, CA 95501

**Table 1**  
**Well Construction Data**  
Former Central BP Station  
2160 Central Ave  
McKinleyville, California  
Blue Rock Project No. NC-24

Well Identification	Date Installed	Installed by	Casing Diameter (inches)	Total Depth (feet)	Blank Interval (feet)	Screened Interval (feet)	Slot Size (inches)	Filter Pack (feet)	Bentonite Seal (feet)	Cement (feet)
MW-1	7/20/99	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-2	7/20/99	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-3	7/20/99	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-4	8/30/00	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-5	8/30/00	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-6	8/30/00	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-7	8/30/00	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-8	8/6/01	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-9	8/6/01	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-10	8/6/01	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-11	8/6/01	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
MW-12	8/6/01	Clearwater	2	25	0-5	5-25	0.02	4-25	3-4	0-3
VEW-1	9/24/03	Clearwater	2	20	0-5	5-20	0.02	4-20	3-4	0-3
VEW-2	9/24/03	Clearwater	2	20	0-5	5-20	0.02	4-20	3-4	0-3
VEW-3	9/24/03	Clearwater	2	20	0-5	5-20	0.02	4-20	3-4	0-3
VEW-4	9/24/03	Clearwater	2	20	0-5	5-20	0.02	4-20	3-4	0-3
VEW-5	9/24/03	Clearwater	2	20	0-5	5-20	0.02	4-20	3-4	0-3
SW-1	9/25/03	Clearwater	2	30	0-28	28-30	0.02	27-30	25.5 - 27	0-25.5
SW-2	9/25/03	Clearwater	2	30	0-28	28-30	0.02	27-30	25.5 - 27	0-25.5
SW-3	9/25/03	Clearwater	2	30	0-28	28-30	0.02	27-30	25.5 - 27	0-25.5
SW-4	9/25/03	Clearwater	2	30	0-28	28-30	0.02	27-30	25.5 - 27	0-25.5
SW-5	9/25/03	Clearwater	2	30	0-28	28-30	0.02	27-30	25.5 - 27	0-25.5
SW-6	9/25/03	Clearwater	2	30	0-28	28-30	0.02	27-30	25.5 - 27	0-25.5

Table 2  
GROUNDWATER ELEVATIONS AND  
ANALYTICAL RESULTS  
Former Central BP Station  
2160 Central Ave.  
McKinleyville, California  
Project No. NC-24

Well No.	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHm (µg/L)	Benzene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	DPE (µg/L)	TAME (µg/L)	ETBE (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Methanol (µg/L)
MW-1	7/28/99	149.69	14.52	135.17	13,000	620	<500	12	10	580	796	25	-	-	-	-	-
	10/25/99	149.69	17.42	132.27	10,000	640	<500	48	3.9	400	262	83	<2.5	119	<2.5	<50	<10
	1/18/00	149.69	14.32	135.37	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1
	2/17/00	149.69	9.36	140.33	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/3/00	149.69	8.52	141.17	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/21/00	149.69	10.39	139.30	<50	<50	<170	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<10	<10	<10
	9/12/00	149.69	17.11	132.58	113	135	-	0.7	0.8	3.6	8.1	<2	<0.5	<0.5	<0.5	<500	<500
	10/16/00	149.69	17.97	131.72	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/16/00	149.69	18.37	131.72	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/14/00	149.69	18.59	131.10	148	<50	-	2.9	<0.8	<1.5	5.1	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
	1/22/01	149.69	13.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2/16/01	149.69	17.78	131.91	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/9/01	149.69	16.78	132.91	885	100	-	<0.3	<0.5	<0.3	6.2	<2	<0.5	<0.5	<0.5	<0.5	<0.5
	4/13/01	149.69	17.11	132.58	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/7/01	149.69	17.7	131.99	-	-	-	-	-	-	-	-	-	-	-	-	-
	6/7/01	149.69	18.04	131.65	930	<250	-	1.7	0.85	20	1.9	0.67	<0.5	<0.5	<0.5	<0.5	<0.5
	7/18/01	149.69	19.02	130.67	-	-	-	-	-	-	-	-	-	-	-	-	-
	8/17/01	149.69	19.57	130.12	170	<100	<0.5	0.66	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/10/01	149.69	dry	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/1/01	149.69	dry	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/27/01	149.69	15.81	133.88	-	-	-	-	-	-	-	-	-	-	-	-	-
	1/14/02	149.69	13.31	136.38	-	-	-	-	-	-	-	-	-	-	-	-	-
	2/4/02	149.69	12.46	137.23	64	<50	-	<0.5	<0.5	<0.5	3.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/14/02	149.69	9.79	139.90	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/4/02	149.69	10.27	139.42	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/7/02	149.69	12.12	137.57	<50	-	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	7/23/02	148.28	16.61	131.67	-	-	-	-	-	-	-	-	-	-	-	-	-
	8/5/02	148.28	17.01	131.27	430	<200	-	<0.5	<0.5	16	15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/18/02	148.28	dry	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2/6/03	148.28	9.53	138.75	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	5/1/03	148.28	7.83	140.45	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	8/1/03	148.28	14.89	133.39	1,200	<200	-	0.63	5.4	1.8	61	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/10/03	148.28	19.25	129.03	<50	64	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/6/04	148.28	10.01	138.27	<50	71	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/04	148.28	15.04	133.24	630	<200	-	<0.5	1.2	15	22	<0.5	-	-	-	-	-
	12/2/04	148.28	19.19	129.09	150	<200	-	<0.5	<0.5	5.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/2/05	148.28	14.04	134.24	130	<50	-	<0.5	<0.5	<0.5	1.3	1.9	<0.5	<0.5	<0.5	<0.5	<0.5
	6/14/05	148.28	13.42	134.86	<50	59	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	7/28/99	149.24	14.11	135.13	<50	<500	-	<0.5	<0.5	<0.5	<0.5	40	-	-	-	-	-
	10/25/99	149.24	16.77	132.47	<50	<500	1.4	<0.5	<0.5	<0.5	<0.5	27	<1	<1	<10	<10	<10
	1/18/00	149.24	9.89	139.35	<50	<500	-	<0.5	<0.5	<0.5	<0.5	1	<1	<1	<10	<10	<10
	2/17/00	149.24	10.76	138.48	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/3/00	149.24	9.72	139.52	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/21/00	149.24	11.21	138.03	<50	<170	-	<0.5	<0.5	<0.5	<0.5	12	<1	<1	<10	<10	<10
	9/12/00	149.24	16.43	132.81	<50	<50	-	0.9	<0.3	<0.3	<0.3	<0.6	23.9	<0.5	<0.5	<0.5	<0.5
	10/16/00	149.24	17.33	131.91	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/16/00	149.24	17.86	132.81	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/14/00	149.24	18.16	131.91	<50	-	<0.3	<0.3	<0.3	<0.3	<0.6	14.3	<0.5	<0.5	<0.5	<0.5	<0.5
	1/22/01	149.24	18.19	131.05	-	-	-	-	-	-	-	-	-	-	-	-	-
	2/16/01	149.24	17.74	131.50	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/9/01	149.24	17.64	132.20	<50	<50	-	<0.3	<0.3	<0.3	<0.3	7	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2  
GROUNDWATER ELEVATION AND  
ANALYTICAL RESULTS  
Former Central BP Station  
2160 Central Ave.  
McKinleyville, California  
Project No. NC-24

Well No.	Sampling Date	TOC (mg/L)	DTW (feet)	GWE (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	Resane (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	DPE (µg/L)	TAME (µg/L)	ETBE (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Methanol (µg/L)	
MW-2	4/1/2001	149.24	17.01	132.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	5/7/01	149.24	17.34	131.90	—	—	—	—	—	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	—	
	6/1/01	149.24	17.83	131.41	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	<0.5	<0.5	<0.5	—	
	7/18/01	149.24	18.65	130.59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	8/17/01	149.24	19.14	130.10	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	10/1/01	149.24	19.92	129.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	11/1/01	149.24	20.55	128.69	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	19	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	12/27/01	149.24	17.89	131.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	1/14/02	149.24	15.86	133.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	2/4/02	149.24	14.51	134.73	820	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	3/14/02	149.24	11.34	137.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	4/8/02	149.24	11.49	137.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	5/7/02	149.24	12.69	136.55	1,200	—	8.9	<0.5	<0.5	<0.5	<0.5	8.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	7/23/02	148.96	15.81	132.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	8/5/02	148.96	16.15	131.91	1,000	<50	—	13	0.7	<0.5	1.5	9.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/1/02	148.96	18.96	129.10	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	2/6/03	148.96	11.04	137.02	1,400	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	5/1/03	148.96	8.96	139.10	120	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	8/1/03	148.96	14.23	133.83	840	<50	—	0.67	<0.5	<0.5	<0.5	0.73	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/1/03	148.96	18.47	129.59	370	<50	—	9.2	<0.5	<0.5	<0.5	5	0.43	<0.5	<0.5	<0.5	<0.5	<0.5	
	2/4/04	148.96	11.34	136.72	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/28/04	148.96	14.69	133.37	66	<50	—	3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	9/8/04	148.96	17.13	139.93	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	12/29/04	148.96	18.66	129.40	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	3/27/05	148.96	15.19	132.87	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/14/05	148.96	13.48	130.58	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
MW-3	7/28/99	148.62	13.40	135.22	<50	53	<500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	100	—	—	—	
	10/25/99	148.62	16.72	131.90	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	11	<1	<1	<10	
	1/18/00	148.62	13.78	134.84	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.9	<1	<1	<10	
	2/17/00	148.62	8.17	140.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	3/3/00	148.62	7.46	141.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	4/21/00	149.24	9.54	139.70	<50	<50	<170	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.9	<1	<1	<10	
	9/12/00	149.24	16.23	133.01	58	<50	—	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.6	89.7	<0.5	9.4	<500
	10/16/00	149.24	17.13	132.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	11/1/00	149.24	17.52	131.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	12/14/00	149.24	17.67	131.57	68	<50	—	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.6	62.3	<0.5	3.8	<0.5
	1/22/01	149.24	17.68	131.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	2/16/01	149.24	16.99	132.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	3/9/01	149.24	15.93	133.31	<200	<50	—	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	33.7	42.6	<2	3.4	<2
	4/1/01	149.24	16.19	133.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	5/7/01	149.24	16.63	132.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	6/1/01	149.24	17.16	132.08	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	73	<0.5	7.7	<0.5
	7/17/01	149.24	18.10	131.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	8/17/01	149.24	18.65	130.59	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	53	<0.5	3.7	<0.5
	10/1/01	149.24	19.48	129.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	11/1/01	149.24	20.06	129.18	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	69	<0.5	3.4	<0.5
	12/27/01	149.24	14.29	134.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	1/14/02	149.24	10.79	138.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	2/4/02	149.24	10.43	138.81	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.2	<0.5	3.5	<0.5
	3/14/02	149.24	8.34	140.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	4/4/02	149.24	9.08	140.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	5/7/02	149.24	10.57	138.67	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	3.4	<0.5
	7/23/02	147.44	15.67	131.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	8/5/02	147.44	16.69	131.35	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4	<0.5	3.4	<0.5
	11/1/02	147.44	18.77	128.67	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10	<0.5	3.8	<0.5

Table 2  
GROUNDWATER ELEVATION AND  
ANALYTICAL RESULTS  
Former Central BP Station  
2160 Central Ave.  
McKinleyville, California  
Project No. NC-24

Well No.	Sampling Date	TOC (mg/L)	DTW (feet)	GWE (feet)	TPHc (µg/L)	TPHd (µg/L)	TPHd (µg/L)	TPHm (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	DPE (µg/L)	TAME (µg/L)	ETBE (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Methanol (µg/L)	
MW-3	2/6/03	147.44	8.14	139.30	<50	62	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	5/1/03	147.44	6.56	140.88	<50	140	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	8/1/03	147.44	13.89	133.55	<50	81	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/1/03	147.44	18.37	129.07	<50	89	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	2/4/04	147.44	8.55	138.89	<50	82	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/28/04	147.44	14.15	133.29	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	9/8/04	147.44	16.93	130.51	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	12/2/04	147.44	18.31	129.13	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	3/27/05	147.44	11.95	135.89	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/14/05	147.44	11.46	135.98	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
MW-4	9/1/00	149.92	17.56	132.36	<50	<50	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
	10/16/00	149.92	18.41	131.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/9/00	149.92	18.65	131.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/14/00	149.92	18.88	131.04	<50	<50	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
	1/22/01	149.92	18.65	131.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2/16/01	149.92	17.82	132.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/9/01	149.92	16.52	133.40	<50	<50	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
	4/13/01	149.92	17.14	132.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/7/01	149.92	17.70	132.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6/1/01	149.92	18.23	131.69	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	7/18/01	149.92	19.24	130.68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8/17/01	149.92	19.84	130.08	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	10/10/01	149.92	20.72	129.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/19/01	149.92	21.28	128.64	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	12/27/01	149.92	15.81	134.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1/14/02	149.92	12.50	137.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2/4/02	149.92	12.08	137.84	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	3/14/02	149.92	9.61	140.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/4/02	149.92	10.48	139.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/7/02	149.92	12.24	137.68	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	7/23/02	148.31	17.01	131.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8/5/02	148.31	17.43	131.08	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/1/02	148.31	20.01	128.50	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	2/6/03	148.31	9.33	139.18	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	5/1/03	148.31	7.67	140.84	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	8/1/03	148.31	15.18	133.33	<50	63	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/1/03	148.31	9.62	128.89	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	2/4/04	148.31	9.86	138.65	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/28/04	148.31	15.21	133.30	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	9/8/04	148.31	18.25	130.26	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	12/2/04	148.31	19.48	129.03	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	3/27/05	148.31	13.29	135.22	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/1/05	148.31	12.73	135.78	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
MW-5	9/1/00	149.92	15.83	133.19	69,300	5,240	-	566	7,310	2,690	9,570	28,5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/1/00	149.92	17.62	131.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/1/00	149.92	17.93	131.09	40,400	7,050	-	324	2,260	1,280	4,730	25	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
	1/22/01	149.92	17.86	131.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2/16/01	149.92	17.22	131.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/9/01	149.92	16.56	132.46	36,500	-	-	523	3,950	1,240	4,750	21.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	4/13/01	149.92	16.54	132.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/7/01	149.92	16.81	132.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6/1/01	149.92	17.28	131.74	35,000	<2,500	-	400	2,800	1,200	4,300	12	<10	<10	<10	<10	<10	<10	<10	<10
	7/18/01	149.92	18.33	130.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8/17/01	149.92	18.93	130.09	33,000	<2,600	-	130	1,300	920	2,900	<5	<5	<5	<5	<5	<5	<5	<5	<5
	10/1/01	149.92	19.82	129.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/1/01	149.92	20.43	128.59	30,000	<2,100	-	630	2,700	1,000	3,300	25	<10	<10	<10	<10	<10	<10	<10	<10

Table 2  
GROUNDWATER ELEVATION AND  
ANALYTICAL RESULTS  
Former Central RPP Station  
2160 Central Ave.  
McKinleyville, California  
Project No. NC-24

Well No.	Sampling Date	TOC (mg/L)	DTW (feet)	GWE (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHm (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Nitrobenzene (µg/L)	MTBE (µg/L)	DPE (µg/L)	TAME (µg/L)	ETBE (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Methanol (µg/L)
MW-5	12/27/01	149.02	17.45	131.57	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1/14/02	149.02	15.48	133.54	—	—	—	—	—	—	—	—	<50	<50	<50	<50	<50	<500	<500
2/4/02	149.02	13.98	135.04	72,000	<2,500	—	2,300	14,000	2,100	8,100	—	—	—	—	—	—	—	—
3/14/02	149.02	10.67	138.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4/4/02	149.02	10.85	138.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5/7/02	149.02	12.10	136.92	30,000	<500	—	1,100	3,700	940	3,300	<50	<5.0	<5.0	<50	<50	<50	<500	<500
7/23/02	147.64	15.37	132.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8/5/02	147.64	15.73	131.91	55,000	<2,500	—	1,100	4,900	1,800	6,500	<20	<20	<20	<20	<20	<20	<200	<200
11/18/02	147.64	18.91	128.73	26,000	<3,500	—	220	450	930	1,900	33	<5	6.7	<50	<50	<50	<500	<500
2/6/03	147.64	10.32	137.32	2,300	<400	—	8.9	60	33	79	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<20
5/1/03	147.64	8.27	139.37	<50	<50	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
8/1/03	147.64	13.81	133.83	8,800	<600	—	110	1,300	210	1,900	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
11/1/03	147.64	18.16	129.58	24,000	<1,300	—	170	200	540	1,000	<5	<5	<5	<5	<5	<5	<50	<50
2/4/04	147.64	10.86	136.78	3,800	<300	—	9.1	31	59	110	<1	<1	<1	<1	<1	<1	<1	<1
6/28/04	147.64	14.27	133.37	13,000	<1,000	—	270	600	440	1,600	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
9/8/04	147.64	16.16	131.48	24,000	<4,000	—	210	230	710	1,200	<5	<5	<5	<5	<5	<5	<5	<5
12/2/04	147.64	18.11	129.53	37,000	<2,000	—	1,900	5,100	1,400	3,500	17	<1	<1	<1	<1	<1	<1	<1
3/2/05	147.64	11.84	135.80	6,000	<800	—	680	1,600	180	480	11	<1	<1	<1	<1	<1	<1	<1
6/1/05	147.64	12.65	134.99	4,100	<100	—	250	550	160	520	6.5	<1	<1	<1	<1	<1	<1	<1
MW-6	9/12/00	149.82	17.28	132.54	2,310	759	—	20.5	28.5	177	58.7	13.8	<0.5	<0.5	<0.5	<0.5	<500	<500
10/16/00	149.82	18.23	131.59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11/16/00	149.82	18.56	131.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12/14/00	149.82	18.82	131.00	1,750	670	—	12.9	2.5	175	9.9	8.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1/22/01	149.82	18.73	131.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2/16/01	149.82	18.03	131.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3/9/01	149.82	17.09	132.73	8,150	1,980	—	11.9	9.4	458	173	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4/13/01	149.82	17.36	132.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6/7/01	149.82	17.82	132.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7/1/01	149.82	18.33	131.49	4,400	<1,200	—	3.6	1.2	180	20	1.9	<1	<1	<1	<1	<1	<10	<10
7/18/01	149.82	19.31	130.51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8/17/01	149.82	19.86	129.96	1,900	<600	—	7.8	<0.5	17	1.3	3.6	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
10/10/01	149.82	20.73	129.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11/10/01	149.82	21.27	128.55	2,400	<400	—	23	2.9	28	0.68	9.4	<0.5	2.3	<0.5	<0.5	<0.5	<100	<100
12/27/01	149.82	17.36	132.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1/14/02	149.82	14.93	134.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2/4/02	149.82	13.93	135.89	2,700	<400	—	0.8	<0.5	55	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
3/14/02	149.82	11.27	138.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4/4/02	149.82	11.62	138.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5/7/02	149.82	12.98	136.84	1,100	<100	—	<0.05	<0.5	24	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
7/23/02	148.42	16.84	131.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8/5/02	148.42	17.23	131.19	2,600	<500	—	1.8	<0.5	180	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<15	<15
11/18/02	148.42	19.94	128.48	370	<200	—	1.7	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
2/6/03	148.42	10.78	137.64	460	<100	—	<0.5	<0.5	3.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
5/1/03	148.42	8.90	139.52	130	<150	—	<0.5	<0.5	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
8/1/03	148.42	15.11	133.31	830	<400	—	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
11/10/03	148.42	19.44	128.98	740	<400	—	2.8	0.64	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50
6/14/05	148.42	14.26	134.16	490	<100	—	<0.5	<0.5	4	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<50

Table 2  
GROUNDWATER ELEVATION AND  
ANALYTICAL RESULTS  
Former Central BP Station  
2160 Central Ave.  
McKinleyville, California  
Project No. NC-24

Well No.	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHm (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	DPE (µg/L)	TAME (µg/L)	ETBE (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Methanol (µg/L)
MW-7	9/12/00	149.53	16.26	131.27	32,400	6,580	--	18,300	46,100	7,650	33,200	<400	<0.5	<0.5	<0.5	<500	--	--
	10/16/00	149.53	17.44	131.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/16/00	149.53	17.96	131.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/14/00	149.53	18.27	131.26	37,200	2,910	--	12,100	28,800	3,220	14,090	81.3	<2.5	2.5	--	--	--	--
	1/22/01	149.53	18.25	131.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/16/01	149.53	17.74	131.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/9/01	149.53	17.04	132.49	37,500	7,810	--	7,120	21,300	2,250	10,440	48.9	<0.5	<0.5	<0.5	<500	--	--
	4/13/01	149.53	17.12	132.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/7/01	149.53	17.40	132.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/1/01	149.53	17.89	131.64	120,000	<4,000	--	9,900	26,000	3,100	13,000	60	<50	<50	<50	<500	--	--
	7/18/01	149.53	18.72	130,81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/1/01	149.53	19.23	130,30	86,000	<3,000	--	8,000	15,000	3,300	12,000	67	<50	<50	<50	<500	<500	<500
	10/10/01	149.53	19.89	129,64	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/19/01	149.53	20.64	128,89	88,000	<6,500	--	5,900	14,000	2,800	11,000	<50	<50	<50	<50	<500	<500	<500
	12/27/01	149.53	17.74	131.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/14/02	149.53	15.71	133.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/4/02	149.53	14.44	135,09	110,000	<10,200	--	960	12,000	3,600	16,000	<50	<50	<50	<500	<500	<500	<500
	3/14/02	149.53	10.88	136,65	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/4/02	149.53	11.18	138,35	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/7/02	149.53	12.49	137,64	180,000	<9,400	--	1,200	13,000	4,100	18,000	<25	<25	<25	<25	<250	<250	<250
	7/25/02	148.09	15.73	132,36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/5/02	148.09	16.06	132,03	130,000	<4,500	--	1,200	15,000	3,900	16,000	<50	<50	<50	<500	<500	<500	<5,000
	11/1/02	148.09	19.12	128,97	110,000	<7,000	--	2,900	21,000	3,300	13,000	<100	<100	<100	<1,000	<1,000	<10,000	<10,000
	2/6/03	148.09	16.64	137,45	78,000	<26,000	--	200	3,100	3,600	13,000	<20	<20	<20	<200	<200	<200	<200
	5/1/03	148.09	8.57	139,52	41,000	<6,700	--	23	400	1,700	6,600	<0.5	<0.5	<0.5	<5	<5	<5	<50
	8/1/03	148.09	14.18	133,91	89,000	<25,000	--	340	4,700	4,300	18,000	<25	<25	<25	<250	<250	<250	<250
	11/1/03	148.09	18.53	129,56	77,000	<6,700	--	630	5,500	1,900	8,400	<25	<25	<25	<250	<250	<250	<250
	2/4/04	148.09	11.05	137,04	62,000	<8,000	--	110	1,900	2,700	11,000	<10	<10	<10	<100	<100	<100	<100
	6/26/04	148.09	14.58	133,51	77,000	<8,000	--	200	3,100	2,700	11,000	<20	<20	<20	<200	<200	<200	<200
	9/8/04	148.09	17.04	131,05	64,000	<10,000	--	320	2,400	2,600	11,000	<25	<25	<25	<250	<250	<250	<250
	12/2/04	148.09	18.64	129,45	44,000	<10,000	--	430	1,100	1,600	5,900	<10	<10	<10	<100	<100	<100	<100
	3/29/05	148.09	15.24	132,85	18,000	<10,000	--	180	460	390	2,400	<4	<4	<4	<40	<40	<40	<40
	6/14/05	148.09	13.99	134,10	16,000	<3,000	--	200	1,400	220	2,400	--	--	--	--	--	--	--
MW-8	8/17/01	148.75	18.38	130,17	540	<200	--	82	<0.5	1,4	3.8	23	<0.5	<0.5	<0.5	7.8	<5	<50
	10/10/01	148.75	19.36	129,39	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/19/01	148.75	19.99	128,76	870	<120	--	19	<0.5	11	<0.5	160	<0.5	<0.5	2.2	4.6	15	<50
	12/27/01	148.75	17.42	131,33	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/14/02	148.75	14.77	133,98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/4/02	148.75	13.48	135,27	1,200	<300	--	30	<0.5	1.3	290	<0.5	4.9	4.3	32	<12	<650	<650
	3/14/02	148.75	10.77	137,98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/4/02	148.75	10.95	137,80	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/7/02	148.75	12.17	136,53	1,400	<100	--	110	0.51	<0.5	1.5	19	<0.5	<0.5	<0.5	9.6	<5	<50
	7/23/02	147.49	15.52	131.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/5/02	147.49	15.90	131.59	780	<200	--	90	<0.5	46	<0.5	40	<0.5	0.96	0.60	0.55	12	<75
	11/1/02	147.49	18.53	128,96	380	100	--	46	<0.5	1.1	<0.5	89	<0.5	1.10	<0.5	1.6	<5	<50
	2/6/03	147.49	10.32	137,17	210	<50	--	10	<0.5	<0.5	24	<0.5	<0.5	<0.5	<0.5	12	<50	<50
	5/1/03	147.49	8.40	139,09	150	<50	--	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<50
	8/1/03	147.49	13.92	133,57	650	120	--	73	<0.5	1.2	<0.5	12	<0.5	<0.5	<0.5	28	<5	<50
	11/1/03	147.49	18.16	129,33	88	87	--	4	<0.5	1.2	<0.5	78	<0.5	1.3	0.93	1.3	8.9	<50
	2/4/04	147.49	10.78	136,71	120	<50	--	12	<0.5	<0.5	4.2	--	--	--	--	--	--	--
	6/22/04	147.49	14.23	133,26	160	<50	--	22	<0.5	0.91	9.6	--	--	--	--	--	--	--
	9/8/04	147.49	16.77	130,72	52	<50	--	15	<0.5	<0.5	27	--	--	--	--	--	--	--
	12/2/04	147.49	18.17	129,12	380	<50	--	39	<0.5	11	<0.5	41	--	--	--	--	--	--
	3/27/05	147.49	14.97	132,52	<50	52	--	<0.5	<0.5	<0.5	<0.5	0.85	--	--	--	--	--	--
	6/14/05	147.49	12.65	135,05	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	0.68	--	--	--	--	--	--

Table 2  
GROUNDWATER ELEVATION AND  
ANALYTICAL RESULTS  
Former Central BP Station  
2160 Central Ave.  
McKinleyville, California  
Project No. NC-24

Well No.	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHm (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	MTBE (µg/L)	DPE (µg/L)	TAME (µg/L)	ETBE (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Methanol (µg/L)
MW-9	8/17/01	148.19	17.41	130.78	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/10/01	148.19	18.69	130.10	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/19/01	148.19	18.66	129.53	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/27/01	148.19	16.10	132.69	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/14/02	148.19	14.09	134.10	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/4/02	148.19	12.88	135.31	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/14/02	148.19	9.91	138.28	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/4/02	148.19	18.05	138.14	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/7/02	148.19	11.27	136.92	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	7/23/02	147.00	14.27	132.73	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/5/02	147.00	14.64	132.36	<50	67	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/18/02	147.00	17.32	129.68	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/6/03	147.00	9.68	137.32	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	5/1/03	147.00	7.78	139.22	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	8/1/03	147.00	12.76	134.34	<50	74	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/11/03	147.00	16.95	130.03	<50	72	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/4/04	147.00	10.16	136.84	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/28/04	147.00	13.11	133.89	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/04	147.00	15.47	131.53	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/2/04	147.00	17.02	129.98	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/27/05	147.00	13.23	133.77	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/14/05	147.00	11.61	135.39	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	8/17/01	148.36	18.23	130.13	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/10/01	148.36	19.14	129.22	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/19/01	148.36	19.78	128.58	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/27/01	148.36	17.53	130.83	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/14/02	148.36	15.73	132.63	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/4/02	148.36	14.23	134.13	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/14/02	148.36	11.24	137.12	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/4/02	148.36	10.84	137.52	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/7/02	148.36	11.74	136.62	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	7/23/02	147.17	14.81	132.36	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/5/02	147.17	15.21	131.96	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/18/02	147.17	17.59	129.01	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/6/03	147.17	10.99	126.18	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	5/1/03	147.17	8.33	138.84	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	8/1/03	147.17	12.59	134.58	<50	86	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/18/03	147.17	17.55	129.62	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/4/04	147.17	11.07	126.10	<50	96	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/28/04	147.17	13.23	133.94	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/04	147.17	16.07	131.10	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/2/04	147.17	17.77	129.40	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/27/05	147.17	14.17	133.00	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/14/05	147.17	12.43	134.74	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-11	8/17/01	147.99	18.28	129.71	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/10/01	147.99	19.21	128.78	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/19/01	147.99	19.83	128.16	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/27/01	147.99	17.49	130.50	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/14/02	147.99	15.45	132.54	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/4/02	147.99	14.07	133.92	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/14/02	147.99	11.71	136.28	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/4/02	147.99	11.19	136.80	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/7/02	147.99	11.80	126.19	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	7/23/02	146.79	14.91	131.88	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/5/02	146.79	15.39	131.40	<50	58	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/18/02	146.79	18.31	128.48	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/6/03	146.79	11.65	135.14	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	5/1/03	146.79	8.80	137.99	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	8/1/03	146.79	12.59	134.20	<50	79	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2  
GROUNDWATER ELEVATION AND  
ANALYTICAL RESULTS  
Former Central BP Station  
2160 Central Ave.  
McKinleyville, California  
Project No. NC-24

Well No.	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPH <sub>E</sub> (µg/L)	TPH <sub>H</sub> (µg/L)	TPH <sub>M</sub> (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	MTBE (µg/L)	DIPE (µg/L)	TAME (µg/L)	ETBE (µg/L)	TBA (µg/L)	Ethanol (µg/L)	Methanol (µg/L)
MW-31	11/1/003	146.79	17.71	129.08	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	2/4/034	146.79	11.64	135.15	<50	95	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/28/034	146.79	13.18	133.61	<50	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	9/8/034	146.79	16.26	130.53	<50	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	12/2/04	146.79	17.90	128.89	<50	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	3/27/05	146.79	14.45	132.34	<50	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/14/05	146.79	12.54	134.25	<50	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
MW-32	8/17/01	147.93	18.31	129.62	599	<500	-	19	<0.5	<0.5	<0.5	19	<0.5	0.97	<0.5	38	<5
	10/1/01	147.93	19.20	128.73	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/1/01	147.93	19.77	128.16	280	<150	-	7.9	<0.5	<0.5	<0.5	20	<0.5	1.3	<0.5	25	<5
	12/27/01	147.93	16.99	130.94	-	-	-	-	-	-	-	-	-	-	-	-	<50
	1/14/02	147.93	14.62	133.31	-	-	-	-	-	-	-	-	-	-	-	-	-
	2/4/02	147.93	13.29	134.64	<50	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50
	3/14/02	147.93	10.51	137.42	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/4/02	147.93	10.63	137.30	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/7/02	147.93	11.80	136.13	600	<100	-	22	<0.5	2.2	<0.5	0.92	<0.5	<0.5	<0.5	<5	<50
	7/23/02	146.74	15.16	131.58	-	-	-	-	-	-	-	-	-	-	-	-	-
	8/5/02	146.74	15.55	131.19	1,000	<200	-	49	6.71	37	20	3.7	<0.5	<0.5	<0.5	6.58	<5
	11/1/02	146.74	18.36	128.38	99	<50	-	1	<0.5	<0.5	1.2	7.2	<0.5	<0.5	<0.5	10	<5
	2/6/03	146.74	10.19	136.55	560	<200	-	10	<0.5	4.8	<0.5	<1	<0.5	<0.5	<0.5	<5	<50
	5/1/03	146.74	8.17	138.57	270	<100	-	9.3	<0.5	0.64	<0.5	<1.5	<0.5	<0.5	<0.5	<5	<50
	8/1/03	146.74	13.52	133.22	770	<100	-	28	<0.5	16	<0.5	1.1	<0.5	<0.5	<0.5	<5	<50
	11/1/03	146.74	17.60	128.94	600	<200	-	12	<0.5	0.57	<0.5	0.69	<0.5	<0.5	<0.5	<5	<50
	2/4/04	146.74	10.55	136.19	240	140	-	7.2	<0.5	4.3	<0.5	<1.5	<0.5	<0.5	<0.5	<5	<50
	6/28/04	146.74	13.83	132.91	670	<200	-	7.4	<0.5	29	<0.5	<1	<0.5	<0.5	<0.5	10	<5
	9/8/04	146.74	16.37	130.37	970	<100	-	23	<0.5	27	<0.5	0.52	<0.5	<0.5	<0.5	<5	<50
	12/2/04	146.74	17.91	128.83	<50	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<50
	3/27/05	146.74	13.70	131.04	740	<200	-	10	<0.5	41	0.61	<0.5	<0.5	<0.5	<0.5	<5	<50
	6/14/05	146.74	12.55	134.19	330	<50	-	2.8	<0.5	7.7	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<50

Notes:

Sample date in parenthesis indicates new well survey per gromacker et al (NCSU/PLTW/M1170) Altimontes Cap HFG/CDa/0109 (Vista Point, Hwy 101). TPH<sub>E</sub>: Total petroleum hydrocarbons as gasoline by EPA Method 8260B.

TOC: Top of casing referenced to benchmark at NCSU/PLTW/M1170 Vista Point, Hwy 101.

DTW: Depth to water as referenced to benchmark.

GWE: Ground water elevation as referenced to benchmark.

µg/L=micrograms per liter parts per billion

<50 = Not analyzable, available, and/or applicable

MCL: Maximum contaminant level, an enforceable drinking water standard

AL: Action level

Taste & odor threshold: A drinking water standard

TPH<sub>H</sub>: Total petroleum hydrocarbons as motor oil by EPA Method 8260B.

TPH<sub>M</sub>: Total petroleum hydrocarbons as diesel by EPA Method 1550/801/5A.

MTBE: Methyl tertiary butyl ether by EPA Method 8260B.

DIPE: Diisopropyl ether by EPA Method 8260B.

TAME: Tertiary amyl methyl ether by EPA Method 8260B.

ETBE: Ethyl tertiary butyl ether by EPA Method 8260B.

TBA: Tertiary butyl alcohol by EPA Method 8260B.

NCRWQCB: North Coast Regional Water Quality Control Board

**Table 3**  
**SVE Air Sample Analytical Results**  
ATC Permit #: NAC - 380  
Former Central BP  
2160 Central Avenue  
McKinleyville, California  
Blue Rock Project No. NC-24

Sample I.D.	Sample Date	TPHg (mg/m3)	B (mg/m3)	T (mg/m3)	E (mg/m3)	X (mg/m3)	MTBE (mg/m3)
Inf 7/6/04 (all wells)	7/6/04	4,600	14	75	36	140	<0.5
Influent (all wells)	7/7/04	2,700	6.3	56	34	140	<0.8
VEW-1 Inf	7/8/04	3,500	42	330	82	340	1.6
VEW-2 Inf	7/8/04	2,500	5.3	90	41	190	<0.5
VEW-3 Inf	7/8/04	4,400	4.8	37	34	120	<0.5
VEW-4 Inf	7/8/04	2,200	1.5	13	27	92	<0.25
VEW-5 Inf	7/8/04	860	0.39	5	14	56	<0.2
VEW-6 Inf	7/8/04	98	<0.2	<0.2	<0.2	<0.2	<0.2
Inf 7/8/04 (all wells)	7/8/04	1,500	3.4	36	23	98	<0.25
Influent (all wells)	7/9/04	1,300	<0.4	1.1	12	47	<0.4
Influent 7/15/04	7/15/04	930	0.27	0.97	8.4	31	<0.2
Influent 7/22/04	7/22/04	970	0.3	0.94	8.1	29	<0.2
Influent 7/29/04	7/29/04	1,200	2.6	22	12	54	<0.2
Influent 8/26/04	8/26/04	3,000	5.8	32	17	95	<0.2
Influent 9/22/04	9/22/04	2,300	3.5	26	19	83	<0.6
Influent 10/14/04	10/14/04	2,700	5.8	47	27	110	<0.5
Influent 11/17/04	11/17/04	6,900	12	86	37	120	<0.5
Influent 12/21/04	12/21/04	4,200	29	120	27	94	<0.5
Influent 1/17/05	1/17/05	280	0.38	3	2.3	11	<0.2
Influent 2/7/05	2/7/05	1,600	6.70	52	14	54	<0.2
Influent 3/17/05	3/17/05	400	1.5	9.6	2.2	9.8	<0.2
Influent 3/18/05	3/18/05	1,000	3.8	26	6.7	28	<0.2
Influent 3/21/05	3/21/05	1,000	3.8	31	6.8	34	<0.2
Influent 3/22/05	3/22/05	1,500	5.4	32	7.1	34	<0.2
Influent 5/9/05	5/9/05	380	0.9	5	1.0	6	<0.2
Influent 6/9/05	6/9/05	990	3.6	20	4.0	18	<0.2

**Table 3**  
**SVE Air Sample Analytical Results**  
ATC Permit #: NAC - 380  
Former Central BP  
2160 Central Avenue  
Mckinleyville, California  
Blue Rock Project No. NC-24

Sample I.D.	Sample Date	TPHg (mg/m3)	B (mg/m3)	T (mg/m3)	E (mg/m3)	X (mg/m3)	MTBE (mg/m3)
Eff 7/6/04	7/6/04	23	<0.2	0.26	<0.2	<0.2	<0.2
Effluent	7/7/04	<20	<0.2	<0.2	<0.2	<0.2	<0.2
Effluent	7/8/04	260	0.24	4.70	6.4	27	<0.2
Effluent	7/9/04	43	<0.2	0.63	0.17	3.9	<0.2
Effluent 7/15/04	7/15/04	<20	<0.2	<0.2	0.24	1.3	<0.2
Effluent 7/22/04	7/22/04	<20	<0.2	<0.2	<0.2	0.65	<0.2
Effluent 7/29/04	7/29/04	<20	<0.2	<0.2	<0.2	0.45	<0.2
Effluent 8/26/04	8/26/04	<20	<0.2	0.35	<0.2	0.4	<0.2
Effluent 9/22/04	9/22/04	100	0.22	2.6	1.2	6.9	<0.2
Effluent 10/14/04	10/14/04	<20	<0.2	<0.2	<0.2	<0.2	<0.2
Effluent 11/17/04	11/17/04	<20	<0.2	<0.2	<0.2	<0.2	<0.2
Effluent 12/21/04	12/21/04	54	0.32	0.66	<0.2	0.22	<0.2
Effluent 1/17/05	1/17/05	<20	<0.2	<0.2	<0.2	<0.2	<0.2
Effluent 2/7/05	2/7/05	28	0.31	<0.2	<0.2	<0.2	<0.2
Effluent 3/17/05	3/17/05	<20	<0.2	<0.2	<0.2	<0.2	<0.2
Effluent 3/18/05	3/18/05	<20	<0.2	<0.2	<0.2	<0.2	<0.2
Effluent 3/21/05	3/21/05	24	<0.2	0.46	<0.2	<0.2	<0.2
Effluent 3/22/05	3/22/05	27	<0.2	0.34	<0.2	<0.2	<0.2
Effluent 5/9/05	5/9/05	<20	<0.2	<0.2	<0.2	<0.2	<0.2
Effluent 6/9/05	6/9/05	<20	<0.2	<0.2	<0.2	<0.2	<0.2

Notes:

SVE	Soil vapor extraction and treatment system - 250 cfm catalytic oxidizer (catox)
Influent	Air sample collected from catox influent
Effluent	Air sample collected from catox effluent
Ops Time	Catox cumulative site operational hours
mg/m3	Milligrams per cubic meter
<#.##	Compound not detected at or below the reported laboratory detection limit
TPHg	Total Petroleum Hydrocarbons as gasoline EPA Method 8260B
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes by EPA Method 8260B
MTBE	Methyl tert-Butyl Ether by EPA Method 8260B

**Table 4**  
**SVE Operational Data**  
ATC Permit #: NAC - 380  
Former Central BP  
2160 Central Avenue  
Eureka California  
Blue Rock Project No. NC-24

Sample Location	Sample Date	Total Ops Time (hr)	Period Ops Time (hr)	TPHg (mg/m3)	SVE Wells On	Manifold Vacuum (in. w.c.)	Flow (scfm)	TPHg Yield (lb/hr)	Average TPHg Yield (lb/hr)	Average TPHg Yield (lbs/day)	Period Yield (lb)	Cumulative Yield (lb)
Influent	7/6/04	3.50	3.50	4,600	VW-1, 2, 3, 4 ,5, 6	29.0	158	2.72	2.72	65.35	10	10
Influent	7/7/04	21.2	17.7	2,700	VW-1, 2, 3, 4 ,5, 6	30.0	194	1.96	2.34	56.22	41	51
Influent	7/8/04	47.0	25.8	1,500	VW- 2, 4 ,6	35.0	182	1.02	1.49	35.82	39	90
Influent	7/9/04	71.6	24.6	1,300	VW- 2, 4 ,6	35.0	178	0.87	0.94	22.67	23	113
Influent	7/15/04	217.0	145.4	930	VW- 2, 4 ,6	35.0	183	0.64	0.75	18.05	109	223
Influent	7/22/04	386.1	169.1	970	VW- 2, 4 ,6	35.0	237	0.86	0.75	17.99	127	349
Influent	7/29/04	553.0	166.9	1,200	VW-1, 2, 3, 4 ,5, 6	35.0	199	0.89	0.88	21.07	147	496
Influent	8/26/04	1,150.0	597.0	3,000	VW-1, 2, 3, 4 ,5, 6	35.0	150	1.69	1.29	30.96	770	1,266
Influent	9/22/04	1,793.0	643.0	2,300	VW-1, 2, 3, 4 ,5, 6	35.0	118	1.02	1.35	32.43	869	2,135
Influent	10/14/04	2,322.0	529.0	2,700	VW -1,4,6	35.0	257	2.60	1.81	43.39	956	3,091
Influent	11/17/04	3,000.0	678.0	6,900	VW -2,3,5	22.0	140	3.62	3.11	74.62	2108	5,199
Influent	12/21/04	3,430.0	430.0	4,200	VW -3,4,6	15.0	180	2.83	3.23	77.41	1387	6,586
Influent	1/17/05	4,016.0	586.0	280	VW -3,4,5,6	20.0	222	0.23	1.53	36.78	898	7,484
Influent	2/7/05	4,471.0	455.0	1,600	VW -3,4,5,6	15.0	207	1.24	0.74	17.68	335	7,820
Influent	3/17/05	4,505.0	34.0	400	VW -3,4,5,6	30.0	262	0.39	0.82	19.60	28	7,847
Influent	3/18/05	4,533.0	28.0	1,000	VW -3,4,5,6	30.0	282	1.06	0.72	17.39	20	7,868
Influent	3/21/05	4,557.0	24.0	1,000	VW -3,4,5,6	22.0	268	1.00	1.03	24.72	25	7,892
Influent	3/22/05	4,565.0	8.0	1,500	VW -3,4,5,6	20.0	252	1.42	1.21	29.04	10	7,902
Influent	5/9/05	4,860.0	295.0	380	VW -3,4,5,6	15.0	244	0.35	0.88	21.16	260	8,162
Influent	6/9/05	5,520.0	660.0	990	VW -3,4,5,6	15.0	223	0.83	0.59	14.09	388	8,550
Cumulative TPHg Recovery (pounds)										8,549		
Cumulative TPHg Recovery (gallons)										1,406		

**Notes:**

SVE	Soil vapor extraction and treatment system - 250 cfm thermal/ lcatalytic oxidizer (thermox)
Influent	Air sample collected from thermox influent
Total Ops Time	thermox cumulative site operational hours
Period Ops Time	Operational period: number of system operating hours since last influent air sampling
TPHg	Total Petroleum Hydrocarbons as gasoline EPA Method 8260B
mg/m3	Milligrams per cubic meter
<###	Compound not detected at or below the reported laboratory detection limit
Vacuum	Vacuum applied to well manifold
in. w.c.	Inches water column
Flow	Process volumetric flow (Q) measured with a flow averaging pitot tube
scfm	Standard cubic feet per minute
lb	Pound
TPHg Yield	Approximate TPHg yield (lb/hr) based on influent analytical data and air flow (Q) for a given date Yield (lbs. Influent concentration (mg/m3) x Q (scfm) x (m3/35.31 ft3) x 1440 min/day x lb/453,592 mg Yield (lbs. Influent concentration (mg/m3) x Q (scfm) x 8.9908 E-5
Avg. TPHg Yield	Average hydrocarbon yield during a given operational period; based upon arithmetic average of TPHg yield at beginning and end of operational period.
Period Yield	The Period Ops Time (hr) x Average TPHg yield (lbs/hr) during that period. Note that this value is an approximation only, and may not account for daily fluctuations in yield.

Cumulative Recovery Estimated total SVE system TPHg recovery since startup.

**Table 5**  
**SVE System APCD Compliance Data**  
ATC Permit #: NAC - 380  
Former Central BP  
2160 Central Avenue  
Blue Rock Project No. NC-24

	Sample Date	Ops Time (hr)	TPHg (mg/m3)	TPHg DE (%)	Flow (scfm)	Daily Emissions Rate	
						TPHg (lb/day)	
APCD Permit Requirements:	weekly	N/A	N/A	>95%	<250	219.12	
Influent Effluent	7/6/04		4,600				
Influent Effluent	7/6/04	3.50	23	99.5%	158	0.29	
Influent Effluent	7/7/04		2,700				
Influent Effluent	7/7/04	21	<20	99.3%	194	0.34	
Influent Effluent	7/8/04		1,500				
Influent Effluent	7/8/04	47	260	82.7%	182	3.83	
Influent Effluent	7/9/04		1,300				
Influent Effluent	7/9/04	72	43	96.7%	178	0.61	
Influent Effluent	7/15/04		930				
Influent Effluent	7/15/04	217	<20	97.8%	183	0.32	
Influent Effluent	7/22/04		970				
Influent Effluent	7/22/04	386	<20	97.9%	237	0.41	
Influent Effluent	7/29/04		1,200				
Influent Effluent	7/29/04	553	<20	98.3%	199	0.34	
Influent Effluent	8/26/04		3,000				
Influent Effluent	8/26/04	1,150	<20	99.3%	150	0.26	
Influent Effluent	9/22/04		2,300				
Influent Effluent	9/22/04	1,793	100	95.7%	118	0.98	
Influent Effluent	10/14/04		2,700				
Influent Effluent	10/14/04	2,322	<20	99.3%	257	0.44	
Influent Effluent	11/17/04		6,900				
Influent Effluent	11/17/04	3,000	<20	99.7%	140	0.24	
Influent Effluent	12/21/04		4,200				
Influent Effluent	12/21/04	3,430	<20	99.5%	180	0.81	
Influent Effluent	1/17/05		280				
Influent Effluent	1/17/05	4,016	<20	92.9%	222	0.38	

**Table 5**  
**SVE System APCD Compliance Data**  
ATC Permit #: NAC - 380  
Former Central BP  
2160 Central Avenue  
Blue Rock Project No. NC-24

	Sample Date	Ops Time (hr)	TPHg (mg/m3)	TPHg DE (%)	Flow (scfm)	Daily Emissions Rate	
						TPHg (lb/day)	
APCD Permit Requirements:	weekly	N/A	N/A	>95%	<250	219.12	
Influent	2/7/05	4,471	1,600				
Effluent	2/7/05		28	98.3%	207	0.46	
Influent	3/17/05	4,505	400				
Effluent	3/17/05		<20	95.0%	262	0.45	
Influent	3/18/05	4,533	1,000				
Effluent	3/18/05		<20	98.0%	282	0.49	
Influent	3/21/05	4,557	1,000				
Effluent	3/21/05		24	97.6%	268	0.57	
Influent	3/22/05	4,565	1,500				
Effluent	3/22/05		27	98.2%	252	0.59	
Influent	5/9/05	4,860	380				
Effluent	5/9/05		<20	94.7%	244	0.42	
Influent	6/9/05	5,520	990				
Effluent	6/9/05		<20	98.0%	223	0.38	
				Avg.TPHg DE (%)	Avg. Flow (cfm)	Avg. Daily Emissions TPHg (lb/day)	
				96.9%	207	0.63	

System Operations/Emissions In Compliance: YES

Notes:

- SVE Soil vapor extraction and treatment system - 250 cfm catalytic oxidizer (thermax)  
Influent Air sample collected from catox influent  
Effluent Air sample collected from catox effluent (exhaust)  
Ops Time catox cumulative site operational hours  
TPHg Total Petroleum Hydrocarbons as gasoline by EPA Method 8260B  
mg/m3 Milligrams per cubic meter  
<#,## Compound not detected at or below the reported laboratory detection limit  
Avg. Average (averages based on monthly and startup data)  
Flow Process volumetric flow (Q) measured with a flow averaging pitot tube  
scfm Standard cubic feet per minute  
lb Pound  
TPHg DE TPHg (laboratory analyzed) destruction efficiency based on equation :  
TPHg DE = (influent concentration TPHg - effluent concentration TPHg)/influent concentration TPHg x 100  
Emissions Rate Analyte Emissions Rate (lb/day) based upon effluent analytical data and air flow volume (Q) for a given date  
Emiss. Rate = Effluent concentration (mg/m3) x Q (scfm) x (m3/35.31 ft3) x 1440 min/day x lb/453,592 mg  
Emiss. Rate = Effluent concentration (mg/m3) x Q (scfm) x 8.9908 E-5

**Table 6**  
**CALCULATIONS FOR HYDROCARBON EMISSIONS**  
ATC Permit # NAC - 380  
Former Central BP  
2160 Central Ave.  
Mckinleyville, CA  
Blue Rock Project No. NC - 24

**Conversion of Contaminant Concentrations from mg/m<sup>3</sup> to ppmv**

Sample ID	TPHg (mg/m <sup>3</sup> )	TPHg (ppmv)	Benzene (mg/m <sup>3</sup> )	Benzene (ppmv)	Toluene (mg/m <sup>3</sup> )	Toluene (ppmv)	Ethlybenz. (mg/m <sup>3</sup> )	Ethlybenz. (ppmv)	Xylenes (mg/m <sup>3</sup> )	Xylenes (ppmv)
EFF 7/6/04	23	5.4	0.2	0.05	0.26	0.063	0.2	0.05	0.2	0.05
EFF 7/7/04	20	5	0.2	0.05	0.2	0.05	0.2	0.05	0.2	0.05
EFF 7/8/04	260	61	0.24	0.068	4.70	1.15	6.4	1.36	27.0	5.81
EFF 7/9/04	43	10	0.2	0.05	0.63	0.15	0.79	0.17	3.9	0.82
EFF 7/15/04	20	5	0.2	0.05	0.20	0.05	0.24	0.051	1.3	0.28
EFF 7/22/04	20	5	0.2	0.05	0.20	0.05	0.2	0.05	0.7	0.14
EFF 7/29/04	20	5	0.2	0.05	0.20	0.05	0.2	0.05	0.5	0.095
EFF 8/26/04	20	5	0.2	0.05	0.35	0.084	0.2	0.05	0.4	0.100
EFF 9/22/04	100	24	0.2	0.063	2.60	0.64	1.2	0.24	6.9	1.5
EFF 10/14/04	20	5	0.2	0.050	0.20	0.05	0.2	0.05	0.2	0.05
EFF 11/17/04	20	5	0.2	0.050	0.20	0.05	0.2	0.05	0.2	0.05
EFF 12/21/04	54	13	0.32	0.093	0.66	0.16	0.2	0.05	0.22	0.05
EFF 1/17/05	20	5	0.20	0.050	0.50	0.05	0.2	0.05	0.20	0.05
EFF 2/7/05	28	6.5	0.20	0.050	0.31	0.075	0.2	0.05	0.2	0.05
EFF 3/17/05	20	5.0	0.20	0.050	0.20	0.050	0.2	0.05	0.2	0.05
EFF 3/18/05	20	5.0	0.20	0.050	0.20	0.050	0.2	0.05	0.2	0.05
EFF 3/21/05	24	6.2	0.20	0.050	0.46	0.120	0.2	0.05	0.2	0.05
EFF 3/22/05	27	6.8	0.20	0.050	0.34	0.090	0.2	0.05	0.2	0.05
EFF 5/9/05	20	5.0	0.20	0.050	0.20	0.050	0.2	0.05	0.2	0.05
EFF 6/9/05	20	5.0	0.20	0.050	0.20	0.050	0.2	0.05	0.2	0.05

**Calculation of Contaminant Effluent Rates**

A (scfm)	B1	B2	B3	B4	B5	conversion (min/day)	conversion 1/360	Emissions			
	TPHg	Benzene	Toluene	Ethylbenz.	Xylenes			TPHg (mw) (lb/mol)	Benz (mw) (lb/mol)	Toluene (mw) (lb/mol)	Ethylbenz mw(lb/mol)
	ppmv/1,000,000										
EFF 7/6/04	158	0.00001	0.0000001	0.0000001	0.0000005	0.0000005	1440	0.0028	86.2	78.1	106.2
EFF 7/7/04	197	0.00001	0.0000001	0.0000001	0.0000005	0.0000005	1440	0.0028	86.2	78.1	106.2
EFF 7/8/04	182	0.00006	0.0000001	0.0000011	0.00000136	0.00000581	1440	0.0028	86.2	78.1	106.2
EFF 7/9/04	178	0.00001	0.0000001	0.0000002	0.00000017	0.00000082	1440	0.0028	86.2	78.1	106.2
EFF 7/15/04	183	0.00001	0.0000001	0.0000000	0.00000005	0.00000028	1440	0.0028	86.2	78.1	106.2
EFF 7/22/04	237	0.00001	0.0000001	0.0000000	0.00000005	0.00000014	1440	0.0028	86.2	78.1	106.2
EFF 7/29/04	199	0.00001	0.0000001	0.0000000	0.00000005	0.00000009	1440	0.0028	86.2	78.1	106.2
EFF 8/26/04	150	0.00001	0.0000001	0.0000001	0.00000005	0.00000010	1440	0.0028	86.2	78.1	106.2
EFF 9/22/04	118	0.00002	0.0000001	0.0000006	0.00000024	0.00000153	1440	0.0028	86.2	78.1	106.2
EFF 10/14/04	257	0.00001	0.0000001	0.0000000	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 11/17/04	140	0.00001	0.0000001	0.0000000	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 12/21/04	180	0.00001	0.0000001	0.0000002	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 1/17/05	222	0.00001	0.0000001	0.0000001	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 2/7/05	207	0.00001	0.0000001	0.0000001	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 3/17/05	262	0.00001	0.0000001	0.0000001	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 3/18/05	282	0.00001	0.0000001	0.0000001	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 3/21/05	268	0.00001	0.0000001	0.0000001	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 3/22/05	252	0.00001	0.0000001	0.0000001	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 5/9/05	244	0.00001	0.0000001	0.0000001	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2
EFF 6/9/05	223	0.00001	0.0000001	0.0000001	0.00000005	0.00000005	1440	0.0028	86.2	78.1	106.2

**Table 6**  
**CALCULATIONS FOR HYDROCARBON EMISSIONS**  
ATC Permit # NAC - 380  
Former Central BP  
2160 Central Ave.  
McKinleyville, CA  
Blue Rock Project No. NC - 24

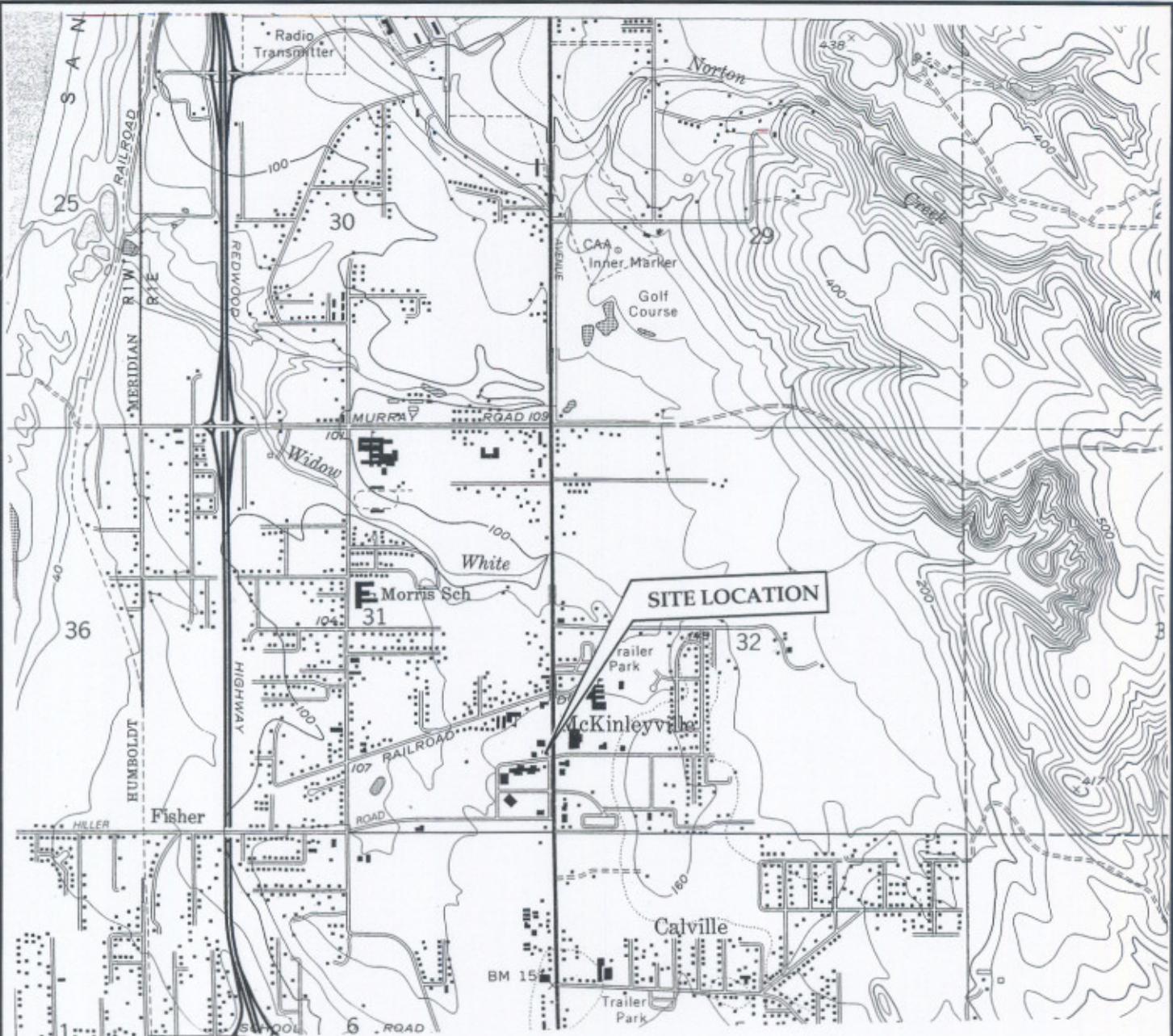
Hydrocarbons Emissions:					
	TPH (lb/day)	Benzene (lb/day)	Toluene (lb/day)	Ethylbenzene (lb/day)	Xylenes (lb/day)
EFF 7/6/04	0.29	0.0001	0.004	0.003	0.003
EFF 7/7/04	0.34	0.0002	0.004	0.003	0.004
EFF 7/8/04	3.83	0.0002	0.089	0.091	0.449
EFF 7/9/04	0.61	0.0002	0.012	0.011	0.062
EFF 7/15/04	0.32	0.0002	0.004	0.003	0.022
EFF 7/22/04	0.41	0.0002	0.005	0.004	0.014
EFF 7/29/04	0.34	0.0002	0.004	0.004	0.008
EFF 8/26/04	0.26	0.0001	0.005	0.003	0.006
EFF 9/22/04	0.98	0.0001	0.032	0.011	0.077
EFF 10/14/04	0.44	0.0002	0.005	0.005	0.005
EFF 11/17/04	0.24	0.0001	0.003	0.002	0.003
EFF 12/21/04	0.81	0.0003	0.012	0.003	0.004
EFF 1/17/05	0.38	0.0002	0.005	0.004	0.004
EFF 2/7/05	0.46	0.0002	0.007	0.004	0.004
EFF 3/17/05	0.45	0.0002	0.006	0.005	0.005
EFF 3/18/05	0.49	0.0003	0.006	0.005	0.006
EFF 3/21/05	0.57	0.0003	0.014	0.005	0.005
EFF 3/22/05	0.59	0.0002	0.010	0.004	0.005
EFF 5/9/05	0.42	0.0002	0.005	0.004	0.005
EFF 6/9/05	0.38	0.0002	0.005	0.004	0.005

**Calculations:**

$\text{TPHg (ppmv)} = \text{TPHg (mg/m}^3\text{)} / 3$   
 $\text{Benzene (ppmv)} = \text{Benzene (mg/m}^3\text{)} / 3$   
 $\text{Toluene (ppmv)} = \text{Toluene (mg/m}^3\text{)} / 3.75$   
 $\text{Ethylbenzene (ppmv)} = \text{Ethylbenzene (mg/m}^3\text{)} / 4.35$   
 $\text{Xylenes (ppmv)} = \text{Xylenes (mg/m}^3\text{)} / 4.35$   
 $\text{TPHg (lb/day)} = A * B1 * C * D * E1$   
 $\text{Benzene (lb/day)} = A * B2 * C * D * E2$   
 $\text{Toluene (lb/day)} = A * B3 * C * D * E3$   
 $\text{Ethylbenzene (lb/day)} = A * B4 * C * D * E4$   
 $\text{Xylenes (lb/day)} = A * B5 * C * D * E5$

where:

A: flow rate in standard cubic feet per minute (scfm)  
B1: (Concentration of TPHg in ppmv)/1,000,000  
B2: (Concentration of Benzene in ppmv)/1,000,000  
B3: (Concentration of Toluene in ppmv)/1,000,000  
B4: (Concentration of Ethylbenzene in ppmv)/1,000,000  
B5: (Concentration of Xylenes in ppmv)/1,000,000  
C: Conversion from minutes to day  
D: Conversion for standard conditions (Assume Ideal Gas Law holds true)  
E1: Molecular weight of TPHg - 86.2 lb/lb-mol  
E2: Molecular weight of Benzene - 78.1 lb/lb-mol  
E3: Molecular weight of Toluene - 106.2 lb/lb-mol  
E4: Molecular weight of Ethylbenzene - 92.1 lb/lb-mol  
E5: Molecular weight of Xylenes - 106.2 lb/lb-mol



SCALE 1:24000

1 0 1 MILE  
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET  
1 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET  
DOTTED LINES REPRESENT 10-FOOT CONTOURS  
DATUM IS MEAN SEA LEVEL  
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER  
THE MEAN RANGE OF TIDE IS APPROXIMATELY 4 FEET

GN  
MN  
0°42' 12 MILS  
18½° 329 MILS

UTM GRID AND 1972 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



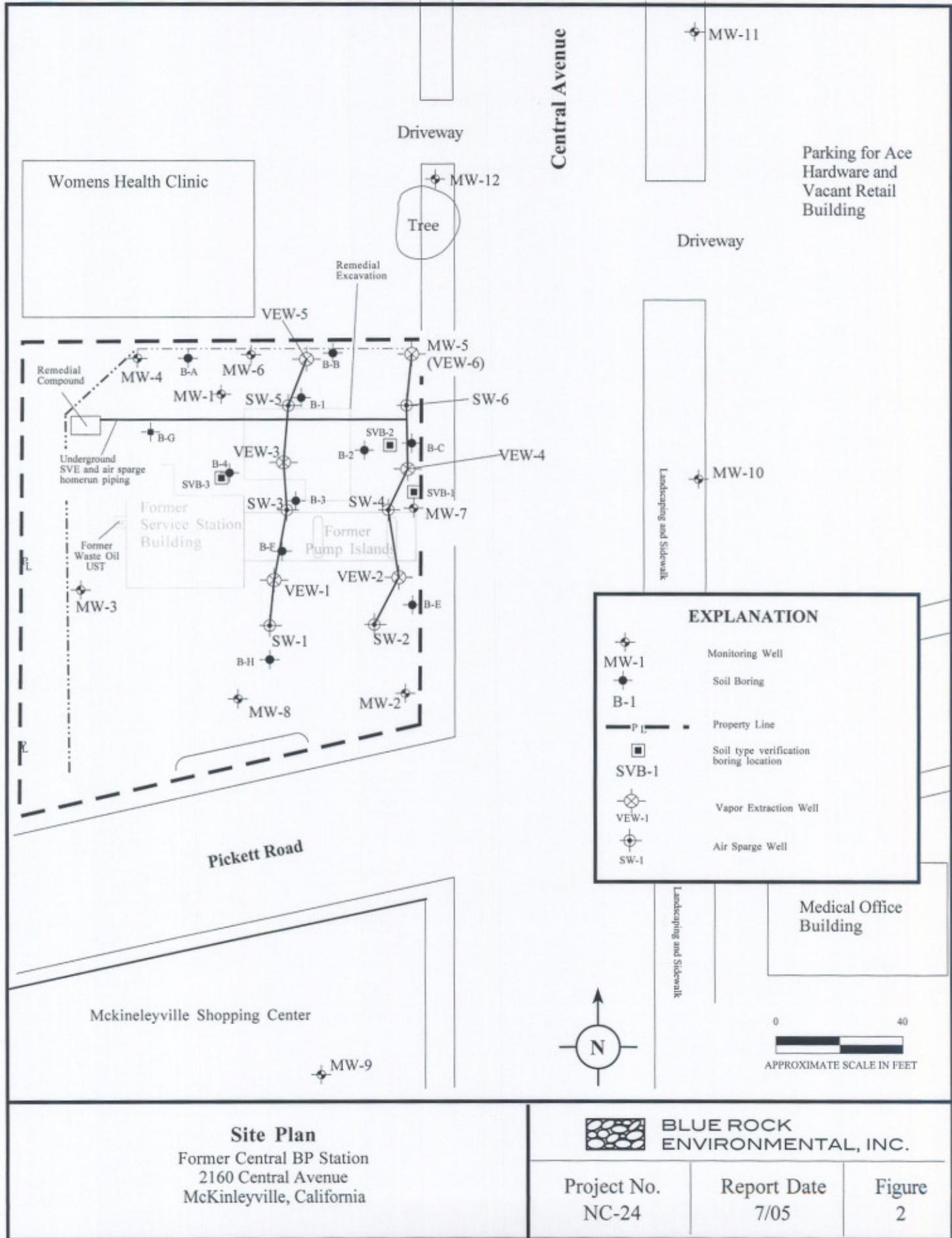
BLUE ROCK  
ENVIRONMENTAL, INC.

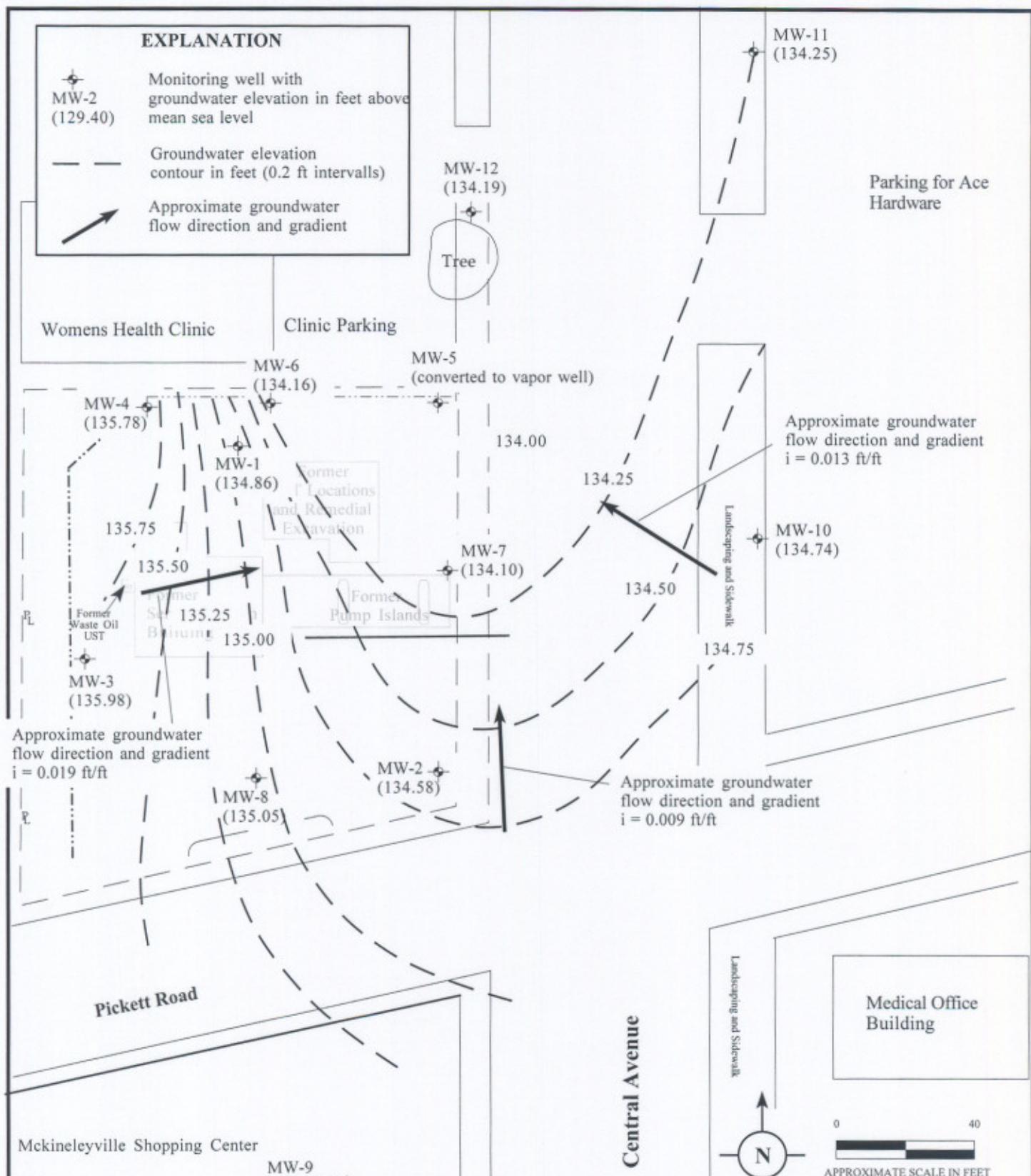
Project No.  
**NC-24**

Date  
**7/05**

Figure  
**1**

**Site Location Map**  
Former Central BP Station  
2160 Central Avenue  
McKinleyville, California



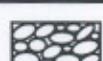


**Groundwater Elevation and Gradient -6/14/05**

Former Central BP Station

2160 Central Avenue

McKinleyville, California

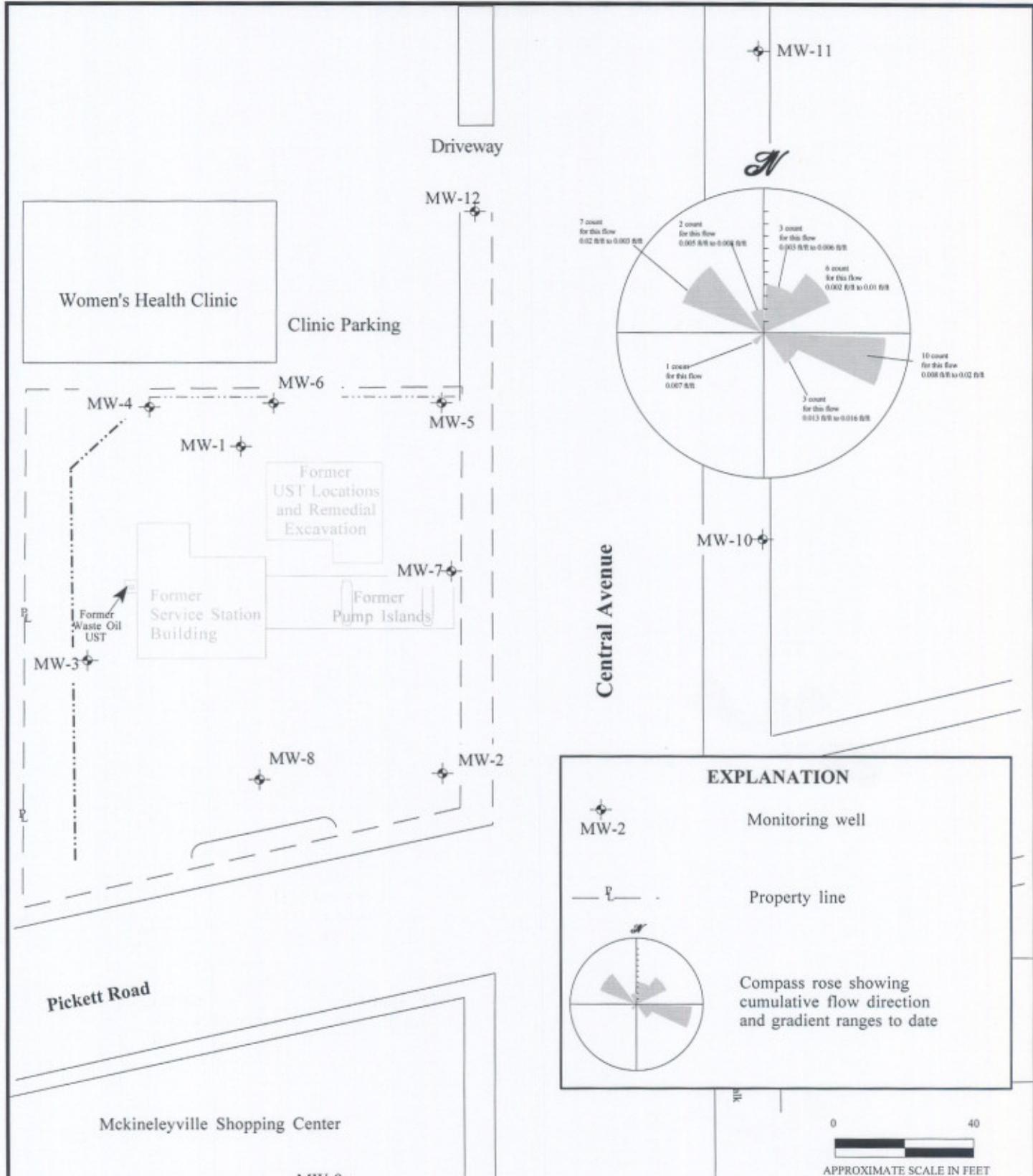


**BLUE ROCK  
ENVIRONMENTAL, INC.**

Project No.  
NC-24

Report Date  
7/05

Figure  
3



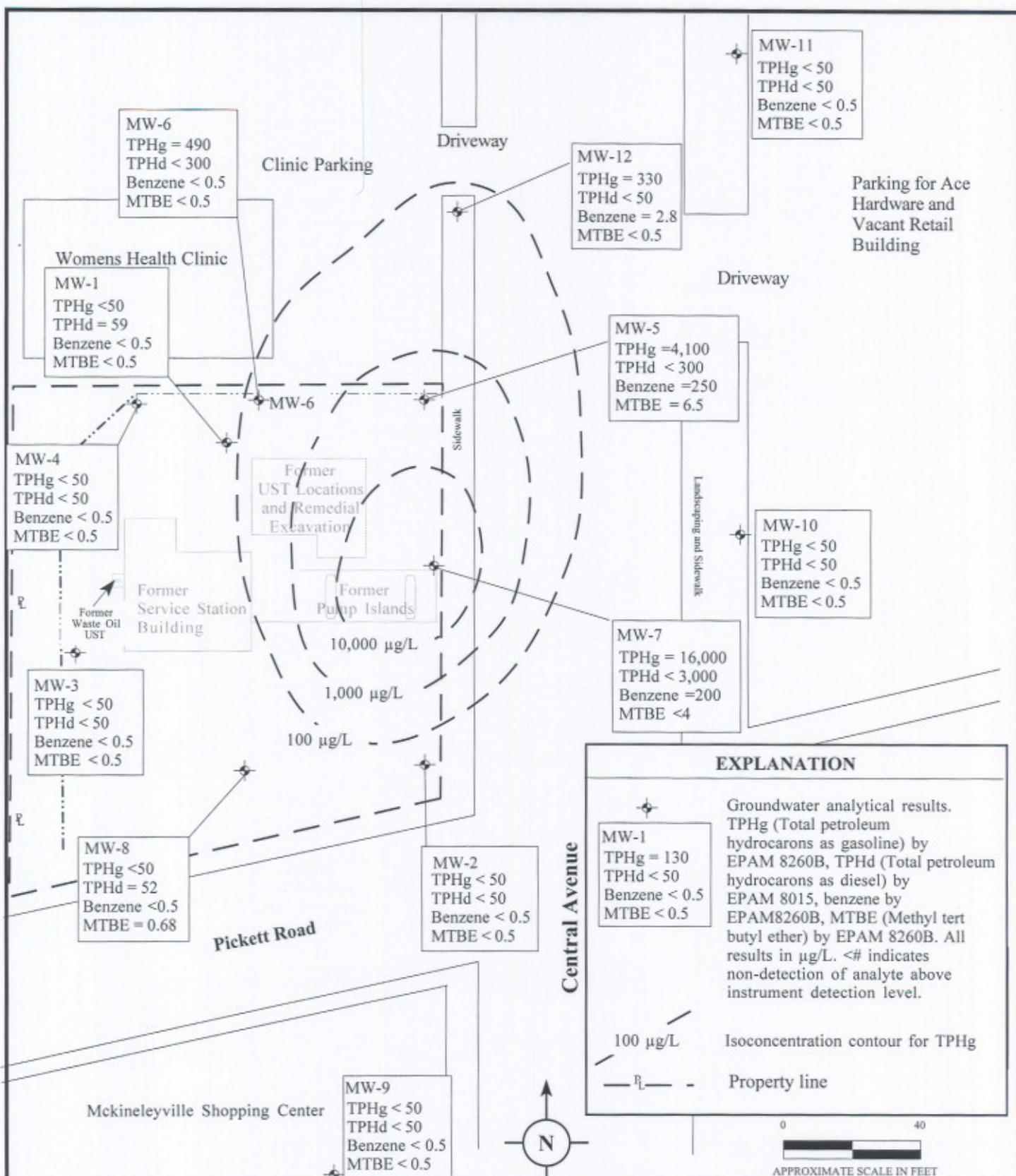
Cumulative Flow Direction and Gradient 6/99 to 3/05  
 Former Central BP Station  
 2160 Central Avenue  
 McKinleyville, California

BLUE ROCK  
ENVIRONMENTAL, INC.

Project No.  
NC-24

Report Date  
7/05

Figure  
4



### Dissolved-Phase Hydrocarbon (TPHg) Distribution 6/14/05

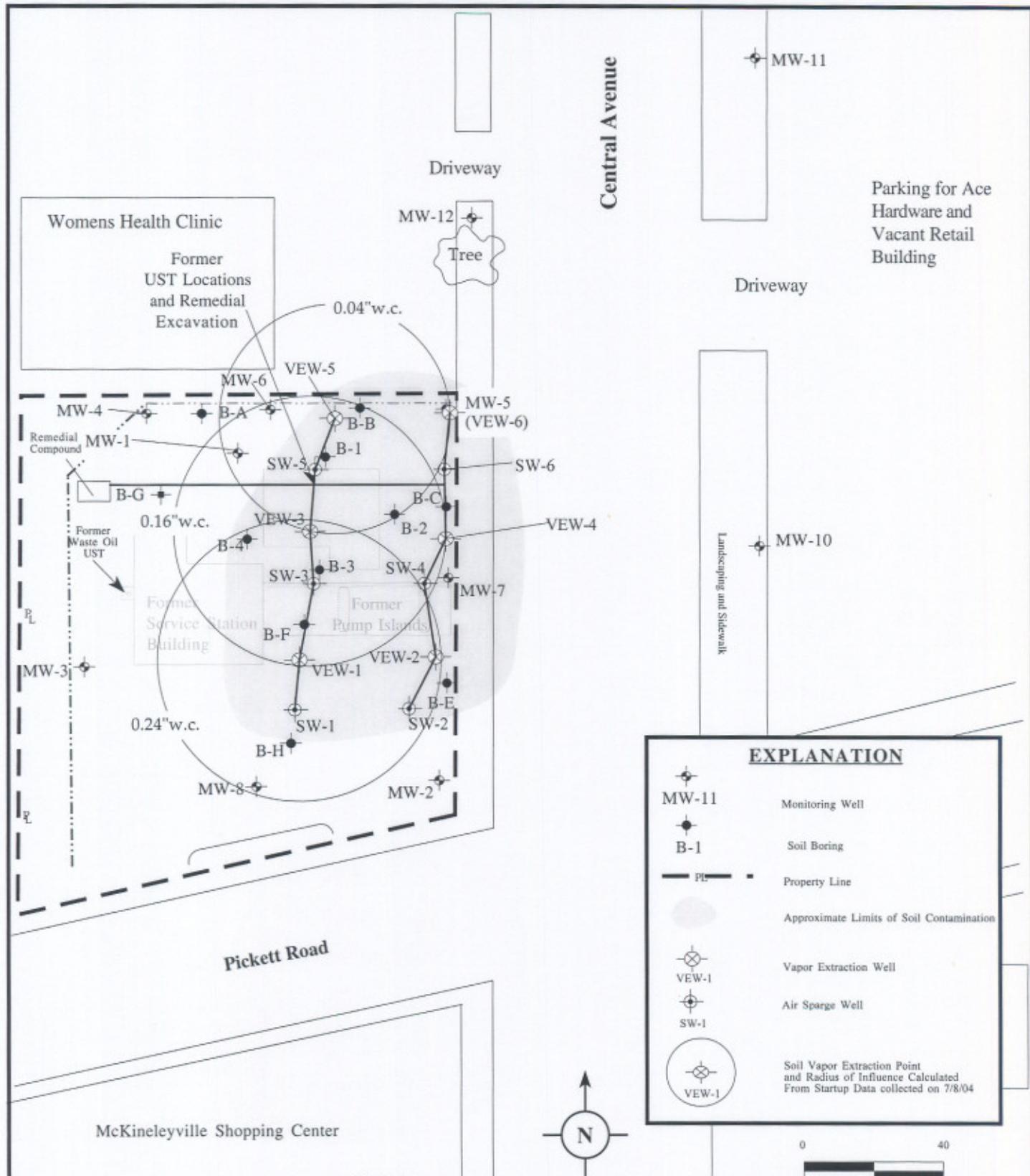
Former Central BP Station  
2160 Central Avenue  
McKinleyville, California

BLUE ROCK ENVIRONMENTAL, INC.

Project No.  
NC-24

Report Date  
7/05

Figure  
5



### SVE Layout and Radius of Influence (VEW1, 3, 5)

Former Central BP Station  
2160 Central Avenue  
McKinleyville, California

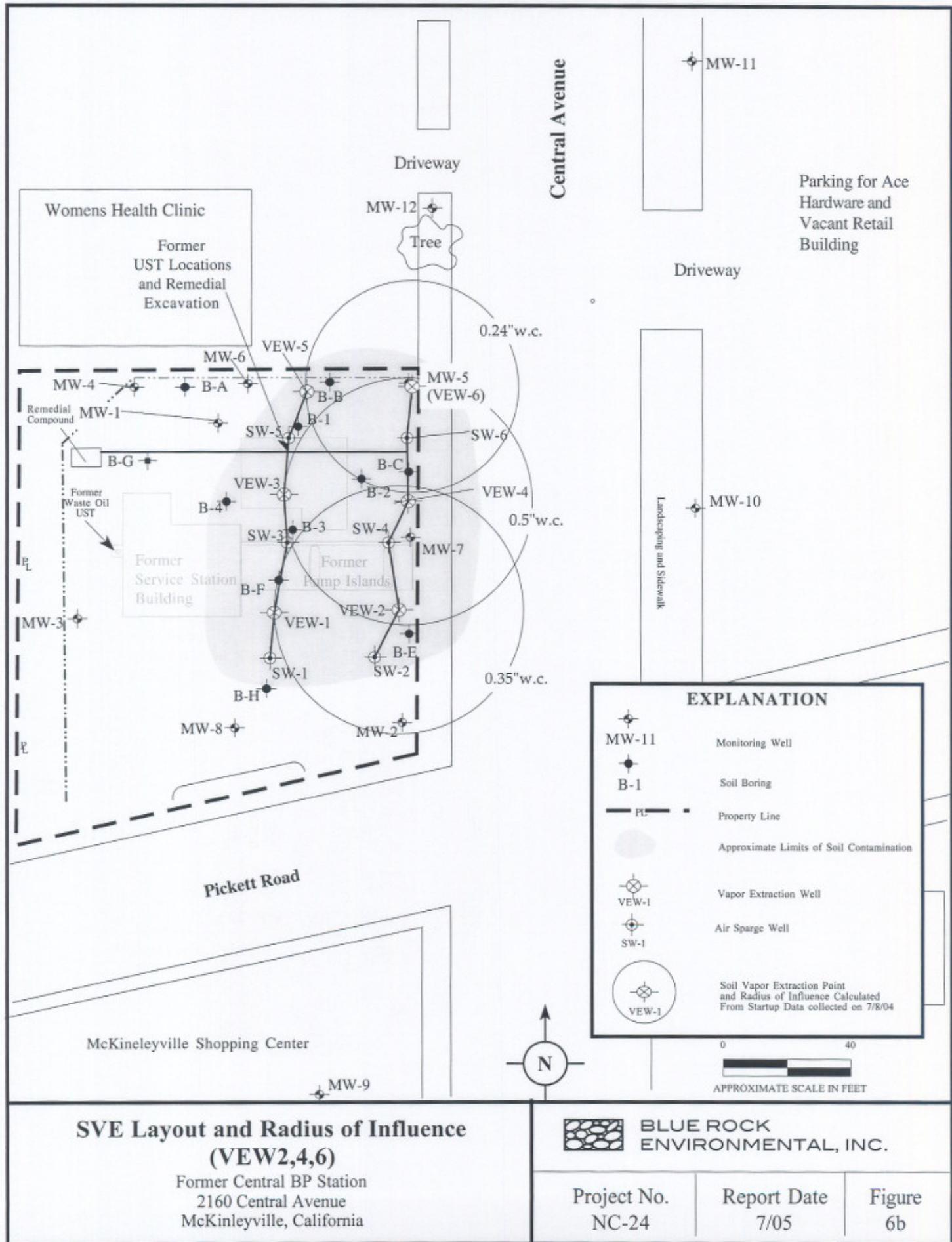


BLUE ROCK  
ENVIRONMENTAL, INC.

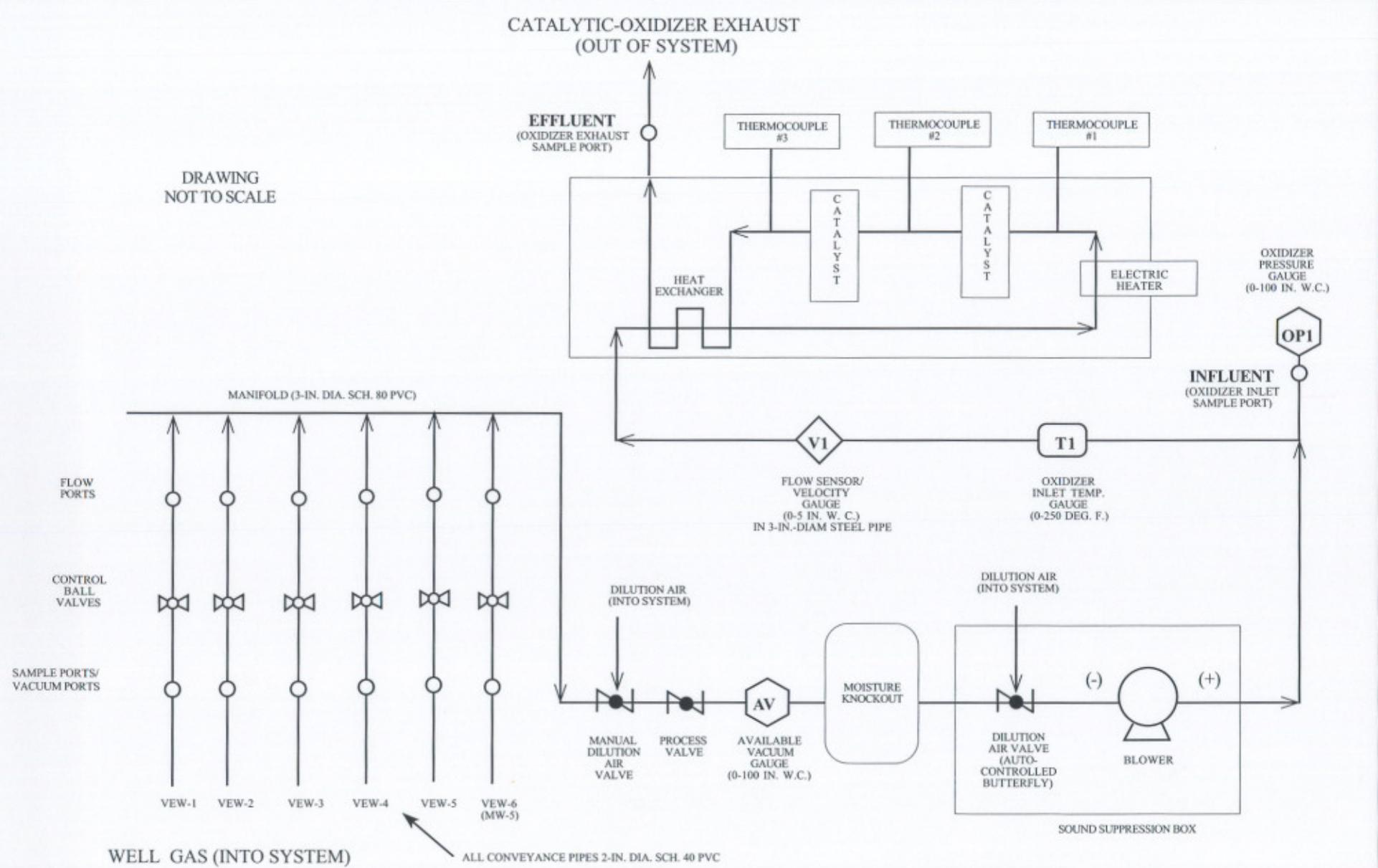
Project No.  
NC-24

Report Date  
7/05

Figure  
6a



DRAWING  
NOT TO SCALE



### Catox And Well Manifold Schematic

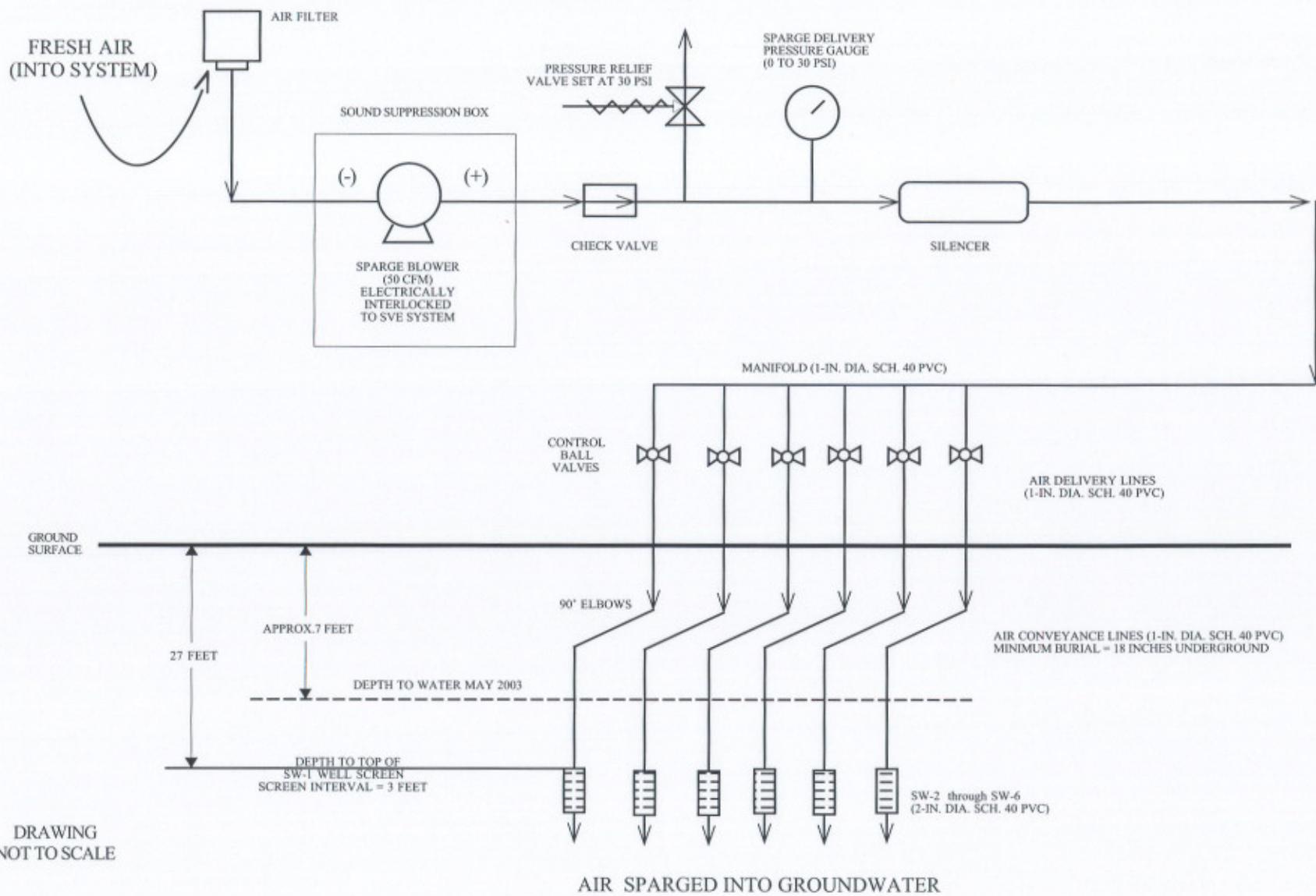
Former Central Bp Station  
2616 Central Avenue  
McKinleyville, California

 BLUE ROCK  
ENVIRONMENTAL, INC.

Project No.  
NC-24

Report Date  
7/05

Figure  
7



### Air-Sparge Blower And Well Manifold Schematic

Former Central Bp Station  
2616 Central Avenue  
McKinleyville, California



BLUE ROCK  
ENVIRONMENTAL, INC.

Project No.  
NC-24

Report Date  
7/05

Figure  
8

## **GAGING DATA/PURGE CALCULATIONS**

Job No.: NC-24 Location: 2160 Central Ave. McKinleyville Date: 6/14/05 Tech(s): JL

#### **Explanation:**

DIA. = Well Diameter

DTB = Depth to Bottom

DTW = Depth to Water

ST = Saturated Thickness (DTB-DTW)

CV = Casing Volume (ST x cf)

PV = Purge Volume (standard 3 x CV,

well development 10 x CV)

SPH = Thickness of Separate Phase Hydrocarbons

### Conversion Factors (cf):

2 in. dia. well cf = 0.16 gal./ft.

4 in. dia. well cf = 0.65 gal./ft.

6 in. dia. well cf = 1.44 gal./ft.



BLUE ROCK  
ENVIRONMENTAL, INC.

## PURGING DATA

SHEET 1 OF 4

Job No.: NC-24 Location: 2160 Central Ave McKinleyville Date: 6/14/05 Tech: JL

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	Sample for:
MW-1			---	---	---	
Calc. purge volume	11:25	1	73	60.5	4.67	TPHg TPHd 8260
	11:30	2	72	59.5	4.69	BTEX MTBE Metals
3.12	11:35	3	70	59.5	4.68	
						Purging Method:
						PVC bailer / Pump
						Sampling Method:
						Dedicated / Disposable bailer
						Sample at: 11:40

COMMENTS: color, turbidity, recharge, sheen

clear / mod. / mod. / no sheen / no odor

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	Sample for:
MW-2			---	---	---	
Calc. purge volume	11:50	1.25	76	53.2	5.80	TPHg TPHd 8260
	11:55	2.50	74	53.5	5.55	BTEX MTBE Metals
4.22	12:00	4.25	75	53.6	5.58	
						Purging Method:
						PVC bailer / Pump
						Sampling Method:
						Dedicated / Disposable bailer
						Sample at: 12:05

COMMENTS: color, turbidity, recharge, sheen

clear / mod. / mod. / no sheen / no odor

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	Sample for:
MW-3			---	---	---	
Calc. purge volume	12:10	0.75	126	58.3	5.52	TPHg TPHd 8260
	12:15	2.25	123	57.3	5.62	BTEX MTBE Metals
3.91	12:20	4.0	125	56.3	5.60	
						Purging Method:
						PVC bailer / Pump
						Sampling Method:
						Dedicated / Disposable bailer
						Sample at: 12:25

COMMENTS: color, turbidity, recharge, sheen

clear / mod. / good / no sheen / no odor

## PURGING DATA

SHEET 2 OF 4

Job No.: NC-24 Location: <sup>2160</sup> Central Ave, McKinleyville Date: 6/14/05 Tech: JL

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	Sample for:
MW-4			--	--	--	TPHg TPHd 8260
Calc. purge volume	12:30	1.25	78	60.8	5.64	BTEX MTBE Metals
4.29	12:35	2.50	111	56.2	5.71	
	12:40	4.25	112	56.2	5.70	Purging Method:
						PVC bailer / Pump
						Sampling Method:
						Dedicated / Disposable bailer
						Sample at: 12:45

COMMENTS: color, turbidity, recharge, sheen

clear/mod./mod./no sheen/no odor

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	Sample for:
MW-5			--	--	--	TPHg TPHd 8260
Calc. purge volume	12:50	0.75	67	62.5	6.43	BTEX MTBE Metals
3.94	12:55	2.50	69	60.4	6.06	
	13:00	4.0	73	60.1	5.97	Purging Method:
						PVC bailer / Pump
						Sampling Method:
						Dedicated / Disposable bailer
						Sample at: 13:05

COMMENTS: color, turbidity, recharge, sheen

clear/mod./mod./no sheen/no odor

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	Sample for:
MW-6			--	--	--	TPHg TPHd 8260
Calc. purge volume	13:10	0.75	65	57.6	6.04	BTEX MTBE Metals
3.80	13:15	2.75	72	56.4	5.93	
	13:20	3.80	73	56.1	5.86	Purging Method:
						PVC bailer / Pump
						Sampling Method:
						Dedicated / Disposable bailer
						Sample at: 13:25

COMMENTS: color, turbidity, recharge, sheen

clear/mod./good/no sheen/no odor

## PURGING DATA

SHEET 3 OF 4

Job No.: NC-24

Location: 2160 Central Ave Date:

Date: 6/14/05 Tech:

7 Tech:

JL

McKinleyville

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
MW-7			---	---	---	Sample for:
Calc. purge volume	14:10	0.50	87	65.5	6.92	<del>TPHg</del> <del>TPHd</del> 8260
	14:15	1.75	90	62.3	6.75	<del>BTEX</del> <del>MTBE</del> Metals
	14:20	3.25	87	66.7	6.72	Purging Method:
						PVC bailer / Pump

COMMENTS: color, turbidity, recharge, sheen

Comments: color, turbidity, rechange, smell

Sample for:

TPHg TPHd 8260

BTEX      MTBE      Metals

PVC bailer / Pump

#### **Sampling Method:**

Dedicated / Disposable baileys

Sample at: 14:25

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	Sample for:
MW-8			---	---	---	TPHg TPHd 8260
Calc. purge volume	13:30	2	178	63.5	5.48	BTEX MTBE Metals
	13:35	4	191	61.1	5.68	
5.85	13:40	6	190	61.0	5.70	Purging Method: PVC bailer / Pump
						Sampling Method: PVC bailer / Pump
COMMENTS: color, turbidity, recharge, sheen						
clear / mad / mad / no / wavy						

COMMENTS: color, turbidity, recharge, sheen

clear / mod. / mod. / <sup>no</sup> smoky / <sup>no</sup> odor

Sample for:

TPHg TPHd 8260

BTEX MTBE Metals

PVC bajler / Pump

#### **Sampling Method:**

Dedicated Disposable bailer

Sample at: 12:15

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	Sample at: 13:45
MW-9			---	---	---	Sample for:
Calc. purge volume	15:15	0.75	148	64.7	5.97	<del>TPhg</del> <del>TPhd</del> 8260
	15:20	2.50	180	61.4	6.09	<del>BTEX</del> <del>MTBE</del> Metals
4.03	15:25	4.0	187	61.0	6.09	Purging Method:
						PVC bailer / Pump
COMMENTS: color, turbidity, recharge, sheen						Sampling Method:
clear / low / mod. / no sheen / no odor						Dedicated / Disposable bailer
						Sample at: 15:30

## PURGING DATA

SHEET 4 OF 4

Job No.: NC-24 Location: 2160 Central Ave., McKinleyville Date: 6/14/05 Tech: JL

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH
MW-10			--	--	--
Calc. purge volume	15:35	1	107	65.2	5.62
	15:40	3	142	63.4	5.69
5.36	15:45	5.5	148	63.2	5.69

Sample for:

~~TPHg~~ ~~TPHd~~ 8260~~BTEX~~ ~~MTBE~~ Metals

Purging Method:

~~PVC bailer~~ / Pump

Sampling Method:

Dedicated / ~~Disposable~~ bailer

Sample at: 15:50

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH
MW-11			--	--	--
Calc. purge volume	15:55	1	109	65.0	5.44
	16:00	3	114	63.6	5.55
5.56	16:05	5.5	116	63.1	5.57

Sample for:

~~TPHg~~ ~~TPHd~~ 8260~~BTEX~~ ~~MTBE~~ Metals

Purging Method:

~~PVC bailer~~ / Pump

Sampling Method:

Dedicated / ~~Disposable~~ bailer

Sample at: 16:10

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH
MW-12			--	--	--
Calc. purge volume	16:15	2	95	63.5	5.45
	16:20	4	135	62.1	5.53
5.98	16:25	6	136	61.2	5.49

Sample for:

~~TPHg~~ ~~TPHd~~ 8260~~BTEX~~ ~~MTBE~~ Metals

Purging Method:

~~PVC bailer~~ / Pump

Sampling Method:

Dedicated / ~~Disposable~~ bailer

Sample at:

16:30

Former McKinleyville BP  
REMEDIATION SYSTEM O&M FORM

DATE	6/9/05
TECH.	PL

	ARRIVAL	DEPARTURE	
Time	1300		
SYSTEM STATUS	UP		(up/down)
Manual Dilution Valve Position	+		% open
Vacuum (AV)	20		in. H2O
TPH Concentration In (Influent)	-	-	ppm
Well + Dilution Air Flow Rate (V1)	223		scfm
Oxidizer Pressure (OP1)	-		in. H2O
Temperature Controller (T1)	753		°F
Recirculation valve position	1.5		# Turns open
TPH Concentration Out (Effluent)	-		ppm
Unit Operational Time	5520		hours

	CHECKED	REPLACED
SVE Blower Filter		
Separator Liquid level		
Sparge Air Compressor Filter		
Blower Oil		

Extraction Wells	Vac. in. H2O	depth to water feet	valve position % open	OVM reading ppm
VE-1	0		0	
VE-2	0		0	
VE-3	0			
VE-4	40	=12	100	
VE-5	30	↓	↓	
VE-6	35	↓	↓	

Air Sparging Wells	sparge press. in. H2O	depth to water feet	valve position % open
SW-1	0		0
SW-2	0		
SW-3	0		0
SW-4	5 psi 36cm	≈12	100
SW-5	6 psi 2.68m	↓	100
SW-6	6 psi 36cm	↓	100

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Water Drums Onsite \_\_\_\_\_

Former McKinleyville BP  
REMEDIATION SYSTEM O&M FORM

DATE	5/9/05
TECH.	AZ.

	ARRIVAL	DEPARTURE	
Time			
SYSTEM STATUS	up	up	(up/down)
Manual Dilution Valve Position	+	+	% open
Vacuum (AV)	15	15	in. H2O
TPH Concentration In (Influent)	-	-	ppm
Well + Dilution Air Flow Rate (V1)	244	244	scfm
Oxidizer Pressure (OP1)			in. H2O
Temperature Controller (T1)	680	735	°F
Recirculation valve position	1.5	2	# Turns open
TPH Concentration Out (Effluent)	-	-	ppm
Unit Operational Time	4859	4860	hours

	CHECKED	REPLACED
SVE Blower Filter	✓	
Separator Liquid level	✓	
Sparge Air Compressor Filter	✓	
Blower Oil	✓	

Extraction Wells	Vac. in. H2O	depth to water feet	valve position % open	OVM reading ppm
VE-1	410	≈ 10	100	
VE-2	1	1	1	
VE-3	1	1	1	
VE-4	1	1	1	
VE-5	1	1	1	
VE-6	1	1	1	

Air Sparging Wells	sparge press. in. H2O PSI	depth to water feet	valve position % open
SW-1	9126psi	≈ 10	100
SW-2	9136psi	1	1
SW-3	9126psi	1	1
SW-4	9126psi	1	1
SW-5	9136psi	1	1
SW-6	9136psi	1	1

Remarks:

restarterd system 3/6/05 after motor rep.

Water Drums Onsite



Report Number : 43679

Date : 5/11/2005

Andrew LoCicero  
Blue Rock Environmental, Inc.  
535 3rd Street, Suite 100  
Eureka, CA 95501

Subject : 2 Vapor Samples  
Project Name : Former Mckinleyville BP  
Project Number : NC-24

Dear Mr. LoCicero,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel Kiff".

Joel Kiff



Report Number : 43679

Date : 5/11/2005

Project Name : Former Mckinleyville BP

Project Number : NC-24

Sample : Effluent 5/9/05

Matrix : Air

Lab Number : 43679-01

Sample Date : 5/9/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.20	0.20	mg/m3	EPA 8260B	5/10/2005
Toluene	< 0.20	0.20	mg/m3	EPA 8260B	5/10/2005
Ethylbenzene	< 0.20	0.20	mg/m3	EPA 8260B	5/10/2005
Total Xylenes	< 0.20	0.20	mg/m3	EPA 8260B	5/10/2005
Methyl-t-butyl ether (MTBE)	< 0.20	0.20	mg/m3	EPA 8260B	5/10/2005
Benzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	5/10/2005
Toluene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	5/10/2005
Ethylbenzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	5/10/2005
Total Xylenes (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	5/10/2005
Methyl-t-butyl ether (in ppmv)	< 0.10	0.10	ppmv	EPA 8260B	5/10/2005
TPH as Gasoline	< 20	20	mg/m3	EPA 8260B	5/10/2005
TPH as Gasoline (in ppmv)	< 5.0	5.0	ppmv	EPA 8260B	5/10/2005
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	5/10/2005
4-Bromofluorobenzene (Surr)	94.4		% Recovery	EPA 8260B	5/10/2005

Approved By: Joe Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 43679

Date : 5/11/2005

Project Name : Former Mckinleyville BP

Project Number : NC-24

Sample : Influent 5/9/05

Matrix : Air

Lab Number : 43679-02

Sample Date : 5/9/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	0.93	0.20	mg/m3	EPA 8260B	5/11/2005
Toluene	5.0	0.20	mg/m3	EPA 8260B	5/11/2005
Ethylbenzene	1.0	0.20	mg/m3	EPA 8260B	5/11/2005
Total Xylenes	5.5	0.20	mg/m3	EPA 8260B	5/11/2005
Methyl-t-butyl ether (MTBE)	< 0.20	0.20	mg/m3	EPA 8260B	5/11/2005
Benzene (in ppmv)	0.29	0.050	ppmv	EPA 8260B	5/11/2005
Toluene (in ppmv)	1.3	0.050	ppmv	EPA 8260B	5/11/2005
Ethylbenzene (in ppmv)	0.24	0.050	ppmv	EPA 8260B	5/11/2005
Total Xylenes (in ppmv)	1.2	0.050	ppmv	EPA 8260B	5/11/2005
Methyl-t-butyl ether (in ppmv)	< 0.10	0.10	ppmv	EPA 8260B	5/11/2005
TPH as Gasoline	380	20	mg/m3	EPA 8260B	5/11/2005
TPH as Gasoline (in ppmv)	96	5.0	ppmv	EPA 8260B	5/11/2005
Toluene - d8 (Surr)	97.7		% Recovery	EPA 8260B	5/11/2005
4-Bromofluorobenzene (Surr)	92.4		% Recovery	EPA 8260B	5/11/2005

Approved By: Joe Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

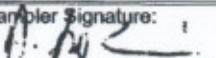


2795 2nd Street, Suite 300  
Davis, CA 95616  
Lab: 530.297.4800  
Fax: 530.297.4808

AIR SAMPLES  
112176

Lab No. 43679

Page \_\_\_\_\_ of \_\_\_\_\_

Project Contact (Hardcopy or PDF To): <b>Andrew LoCicero</b>			California EDF Report? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Company/Address: <b>Blue Rock Env.</b> <b>535 3rd St., #100 Eureka CA 95501</b>			Recommended but not mandatory to complete this section: Sampling Company Log Code: - - -		
Phone No.: <b>707-441-1934</b>	FAX No.: <b>707-441-1949</b>	Global ID: <b>ppb</b>			TAT
Project Number: <b>NC-24</b>	P.O. No:	<b>EDF Deliverable To (Email Address):</b> <b>andrew@blue-rockenv.com</b>			
Project Name: <b>Former McKinleyville BF</b>		Sampler Signature: 			
Project Address: <b>2160 Central Ave McKinleyville CA</b>		Sampling		Container	Preservative
		Date	Time	40 ml VOA SLEEVE	HCl HNO <sub>3</sub> ICE NONE Dunk WATER SOIL Air
				<b>TPH/km</b>	BTEX (8021B) BTEX/TPH Gas/MTBE (8021B/M8015) TPH as Diesel (M8015)
					TPH as Motor Oil (M8015)
					TPH Gas/BTEX/MTBE (8260B)
					5 Oxygenates/TPH Gas/BTEX (8260B)
					7 Oxygenates/TPH Gas/BTEX (8260B)
					5 Oxygenates (8260B)
					7 Oxygenates (8260B)
					Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)
					EPA 8260B (Full List)
					Volatile Halocarbons (EPA 8260B)
					Lead (7421/239, 2) TOTAL (X) W.E.T. (X)
12 hr/24 hr/48 hr/72 hr/1 wk					
For Lab Use Only					

*Distribution:* White - Lab, Pink - Original

Forms/coc 121001.fm9



Report Number : 44275

Date : 6/14/2005

Andrew LoCicero  
Blue Rock Environmental, Inc.  
535 3rd Street, Suite 100  
Eureka, CA 95501

Subject : 2 Vapor Samples  
Project Name : Former McKinleyville BP  
Project Number : NC-24

Dear Mr. LoCicero,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel Kiff".

Joel Kiff



Report Number : 44275

Date : 6/14/2005

Project Name : Former McKinleyville BP

Project Number : NC-24

Sample : Effluent 6/9/05

Matrix : Air

Lab Number : 44275-01

Sample Date : 6/9/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Toluene	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Ethylbenzene	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Total Xylenes	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Methyl-t-butyl ether (MTBE)	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Benzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	6/11/2005
Toluene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	6/11/2005
Ethylbenzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	6/11/2005
Total Xylenes (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	6/11/2005
Methyl-t-butyl ether (in ppmv)	< 0.10	0.10	ppmv	EPA 8260B	6/11/2005
TPH as Gasoline	< 20	20	mg/m3	EPA 8260B	6/11/2005
TPH as Gasoline (in ppmv)	< 5.0	5.0	ppmv	EPA 8260B	6/11/2005
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	6/11/2005
4-Bromofluorobenzene (Surr)	92.5		% Recovery	EPA 8260B	6/11/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 44275

Date : 6/14/2005

Project Name : Former McKinleyville BP

Project Number : NC-24

Sample : Influent 6/9/05

Matrix : Air

Lab Number : 44275-02

Sample Date : 6/9/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	3.6	0.20	mg/m3	EPA 8260B	6/11/2005
Toluene	20	0.20	mg/m3	EPA 8260B	6/11/2005
Ethylbenzene	4.0	0.20	mg/m3	EPA 8260B	6/11/2005
Total Xylenes	18	0.20	mg/m3	EPA 8260B	6/11/2005
Methyl-t-butyl ether (MTBE)	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Benzene (in ppmv)	1.1	0.050	ppmv	EPA 8260B	6/11/2005
Toluene (in ppmv)	5.2	0.050	ppmv	EPA 8260B	6/11/2005
Ethylbenzene (in ppmv)	0.90	0.050	ppmv	EPA 8260B	6/11/2005
Total Xylenes (in ppmv)	4.0	0.050	ppmv	EPA 8260B	6/11/2005
Methyl-t-butyl ether (in ppmv)	< 0.10	0.10	ppmv	EPA 8260B	6/11/2005
TPH as Gasoline	990	20	mg/m3	EPA 8260B	6/11/2005
TPH as Gasoline (in ppmv)	250	5.0	ppmv	EPA 8260B	6/11/2005
Toluene - d8 (Surr)	93.7		% Recovery	EPA 8260B	6/11/2005
4-Bromofluorobenzene (Surr)	98.5		% Recovery	EPA 8260B	6/11/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 44275

Date : 6/14/2005

QC Report : Method Blank Data

Project Name : Former McKinleyville BP

Project Number : NC-24

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Toluene	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Ethylbenzene	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Total Xylenes	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Methyl-t-butyl ether (MTBE)	< 0.20	0.20	mg/m3	EPA 8260B	6/11/2005
Benzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	6/11/2005
Toluene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	6/11/2005
Ethylbenzene (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	6/11/2005
Total Xylenes (in ppmv)	< 0.050	0.050	ppmv	EPA 8260B	6/11/2005
Methyl-t-butyl ether (in ppmv)	< 0.10	0.10	ppmv	EPA 8260B	6/11/2005
TPH as Gasoline	< 20	20	mg/m3	EPA 8260B	6/11/2005
TPH as Gasoline (in ppmv)	< 5.0	5.0	ppmv	EPA 8260B	6/11/2005
Toluene - d8 (Surrogate)	106	%	EPA 8260B	6/11/2005	
4-Bromofluorobenzene (Surrogate)	91.0	%	EPA 8260B	6/11/2005	

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed





2795 2nd Street, Suite 300  
Davis, CA 95616  
Lab: 530.297.4800  
Fax: 530.297.4808

AIR SAMPLES

Lab No. 44275

Page \_\_\_\_\_ of \_\_\_\_\_

*Distribution: White - Lab, Pink - Originator*

Forms/coc 121001.bn9



Report Number : 44359

Date : 6/24/2005

Andrew LoCicero  
Blue Rock Environmental, Inc.  
535 3rd Street, Suite 100  
Eureka, CA 95501

Subject : 12 Water Samples  
Project Name : PICO  
Project Number : NC-24

Dear Mr. LoCicero,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel Kiff".

Joel Kiff



Report Number : 44359

Date : 6/24/2005

Subject : 12 Water Samples  
Project Name : PICO  
Project Number : NC-24

## Case Narrative

The Method Reporting Limit for TPH as Diesel is increased due to interference from Gasoline-Range Hydrocarbons for samples MW-5, MW-6 and MW-7.

Hydrocarbons reported as TPH as Diesel do not exhibit a typical Diesel chromatographic pattern for samples MW-1 and MW-8. These hydrocarbons are higher boiling than typical diesel fuel.

Approved By:

A handwritten signature in black ink that reads "Joe Kiff". The signature is fluid and cursive, with "Joe" on the left and "Kiff" on the right, connected by a vertical line.

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800



Report Number : 44359

Date : 6/24/2005

Project Name : PICO

Project Number : NC-24

Sample : MW-1

Matrix : Water

Lab Number : 44359-01

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/17/2005
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/17/2005
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	6/17/2005
TPH as Diesel (Silica Gel)	59	50	ug/L	M EPA 8015	6/23/2005
Octacosane (Diesel Surrogate)	121		% Recovery	M EPA 8015	6/23/2005

Sample : MW-2

Matrix : Water

Lab Number : 44359-02

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/17/2005
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	6/17/2005
4-Bromofluorobenzene (Surr)	92.7		% Recovery	EPA 8260B	6/17/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	6/21/2005
Octacosane (Diesel Surrogate)	121		% Recovery	M EPA 8015	6/21/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 44359

Date : 6/24/2005

Project Name : PICO

Project Number : NC-24

Sample : MW-3

Matrix : Water

Lab Number : 44359-03

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/18/2005
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	6/18/2005
4-Bromofluorobenzene (Surr)	92.4		% Recovery	EPA 8260B	6/18/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	6/23/2005
Octacosane (Diesel Surrogate)	122		% Recovery	M EPA 8015	6/23/2005

Sample : MW-4

Matrix : Water

Lab Number : 44359-04

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/18/2005
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	6/18/2005
4-Bromofluorobenzene (Surr)	93.1		% Recovery	EPA 8260B	6/18/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	6/23/2005
Octacosane (Diesel Surrogate)	124		% Recovery	M EPA 8015	6/23/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 44359

Date : 6/24/2005

Project Name : PICO

Project Number : NC-24

Sample : MW-5

Matrix : Water

Lab Number : 44359-05

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	250	0.90	ug/L	EPA 8260B	6/18/2005
Toluene	550	9.0	ug/L	EPA 8260B	6/17/2005
Ethylbenzene	160	0.90	ug/L	EPA 8260B	6/18/2005
Total Xylenes	520	0.90	ug/L	EPA 8260B	6/18/2005
Methyl-t-butyl ether (MTBE)	6.5	0.90	ug/L	EPA 8260B	6/18/2005
TPH as Gasoline	4100	90	ug/L	EPA 8260B	6/18/2005
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/18/2005
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	6/18/2005
TPH as Diesel (Silica Gel)	< 300	300	ug/L	M EPA 8015	6/23/2005
Octacosane (Diesel Surrogate)	123		% Recovery	M EPA 8015	6/23/2005

Sample : MW-6

Matrix : Water

Lab Number : 44359-06

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Ethylbenzene	4.0	0.50	ug/L	EPA 8260B	6/18/2005
Total Xylenes	1.3	0.50	ug/L	EPA 8260B	6/18/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
TPH as Gasoline	490	50	ug/L	EPA 8260B	6/18/2005
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	6/18/2005
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	6/18/2005
TPH as Diesel (Silica Gel)	< 300	300	ug/L	M EPA 8015	6/23/2005
Octacosane (Diesel Surrogate)	118		% Recovery	M EPA 8015	6/23/2005

Approved By:

Joel Kiff

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Report Number : 44359

Date : 6/24/2005

Project Name : PICO

Project Number : NC-24

Sample : MW-7

Matrix : Water

Lab Number : 44359-07

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	200	4.0	ug/L	EPA 8260B	6/18/2005
Toluene	1400	4.0	ug/L	EPA 8260B	6/18/2005
Ethylbenzene	220	4.0	ug/L	EPA 8260B	6/18/2005
Total Xylenes	2400	4.0	ug/L	EPA 8260B	6/18/2005
Methyl-t-butyl ether (MTBE)	< 4.0	4.0	ug/L	EPA 8260B	6/18/2005
TPH as Gasoline	16000	400	ug/L	EPA 8260B	6/18/2005
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/18/2005
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	6/18/2005
TPH as Diesel (Silica Gel)	< 3000	3000	ug/L	M EPA 8015	6/22/2005
Octacosane (Diesel Surrogate)	118		% Recovery	M EPA 8015	6/22/2005

Sample : MW-8

Matrix : Water

Lab Number : 44359-08

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Methyl-t-butyl ether (MTBE)	0.68	0.50	ug/L	EPA 8260B	6/17/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/17/2005
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	6/17/2005
4-Bromofluorobenzene (Surr)	94.2		% Recovery	EPA 8260B	6/17/2005
TPH as Diesel (Silica Gel)	52	50	ug/L	M EPA 8015	6/23/2005
Octacosane (Diesel Surrogate)	122		% Recovery	M EPA 8015	6/23/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 44359

Date : 6/24/2005

Project Name : PICO

Project Number : NC-24

Sample : MW-9

Matrix : Water

Lab Number : 44359-09

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/18/2005
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	6/18/2005
4-Bromofluorobenzene (Surr)	93.5		% Recovery	EPA 8260B	6/18/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	6/22/2005
Octacosane (Diesel Surrogate)	112		% Recovery	M EPA 8015	6/22/2005

Sample : MW-10

Matrix : Water

Lab Number : 44359-10

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/17/2005
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	6/17/2005
4-Bromofluorobenzene (Surr)	91.3		% Recovery	EPA 8260B	6/17/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	6/22/2005
Octacosane (Diesel Surrogate)	114		% Recovery	M EPA 8015	6/22/2005

Approved By:

Joe Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 44359

Date : 6/24/2005

Project Name : PICO

Project Number : NC-24

Sample : MW-11

Matrix : Water

Lab Number : 44359-11

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/18/2005
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	6/18/2005
4-Bromofluorobenzene (Surr)	93.0		% Recovery	EPA 8260B	6/18/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	6/23/2005
Octacosane (Diesel Surrogate)	123		% Recovery	M EPA 8015	6/23/2005

Sample : MW-12

Matrix : Water

Lab Number : 44359-12

Sample Date : 6/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	2.8	0.50	ug/L	EPA 8260B	6/18/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Ethylbenzene	7.7	0.50	ug/L	EPA 8260B	6/18/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
TPH as Gasoline	330	50	ug/L	EPA 8260B	6/18/2005
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	6/18/2005
4-Bromofluorobenzene (Surr)	94.4		% Recovery	EPA 8260B	6/18/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	6/22/2005
Octacosane (Diesel Surrogate)	117		% Recovery	M EPA 8015	6/22/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 44359

Date : 6/24/2005

**QC Report : Method Blank Data****Project Name : PICO****Project Number : NC-24**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	6/21/2005	Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Octacosane (Diesel Surrogate)	99.4		%	M EPA 8015	6/21/2005	Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	6/23/2005	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Octacosane (Diesel Surrogate)	114		%	M EPA 8015	6/23/2005	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/18/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/18/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005	Toluene - d8 (Surr)	87.4		%	EPA 8260B	6/18/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005	4-Bromofluorobenzene (Surr)	110		%	EPA 8260B	6/18/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005						
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/17/2005						
Toluene - d8 (Surr)	99.3		%	EPA 8260B	6/17/2005						
4-Bromofluorobenzene (Surr)	97.1		%	EPA 8260B	6/17/2005						
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005						
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005						
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005						
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005						
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/17/2005						
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/17/2005						
Toluene - d8 (Surr)	101		%	EPA 8260B	6/17/2005						
4-Bromofluorobenzene (Surr)	105		%	EPA 8260B	6/17/2005						

Approved By: Joe Kiff

KIFF ANALYTICAL, LLC  
2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 44359

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 6/24/2005

Project Name : PICO

Project Number : NC-24

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH as Diesel	Blank	<50	1000	1000	1000	1040	ug/L	M EPA 8015	6/21/05	100	104	3.81	70-130	25
TPH as Diesel	Blank	<50	1000	1000	1000	1010	ug/L	M EPA 8015	6/23/05	100	101	0.288	70-130	25
Benzene	44348-01	<0.50	39.8	40.0	39.8	39.8	ug/L	EPA 8260B	6/17/05	100	99.4	0.553	70-130	25
Toluene	44348-01	<0.50	39.8	40.0	39.0	39.4	ug/L	EPA 8260B	6/17/05	98.0	98.5	0.440	70-130	25
Tert-Butanol	44348-01	<5.0	199	200	194	195	ug/L	EPA 8260B	6/17/05	97.8	97.6	0.106	70-130	25
Methyl-t-Butyl Ether	44348-01	4.0	39.8	40.0	41.4	42.7	ug/L	EPA 8260B	6/17/05	94.0	96.6	2.82	70-130	25
Benzene	44359-01	<0.50	39.9	40.0	38.7	39.1	ug/L	EPA 8260B	6/17/05	97.0	97.7	0.750	70-130	25
Toluene	44359-01	<0.50	39.9	40.0	39.4	39.7	ug/L	EPA 8260B	6/17/05	98.6	99.3	0.656	70-130	25
Tert-Butanol	44359-01	<5.0	200	200	186	199	ug/L	EPA 8260B	6/17/05	93.2	99.4	6.48	70-130	25
Methyl-t-Butyl Ether	44359-01	<0.50	39.9	40.0	36.4	32.0	ug/L	EPA 8260B	6/17/05	91.3	80.1	13.1	70-130	25
Benzene	44381-02	<0.50	40.0	40.0	40.5	38.8	ug/L	EPA 8260B	6/18/05	101	97.1	4.16	70-130	25
Toluene	44381-02	<0.50	40.0	40.0	35.7	39.5	ug/L	EPA 8260B	6/18/05	89.2	98.7	10.1	70-130	25
Tert-Butanol	44381-02	<5.0	200	200	207	208	ug/L	EPA 8260B	6/18/05	103	104	0.683	70-130	25
Methyl-t-Butyl Ether	44381-02	17	40.0	40.0	56.3	54.2	ug/L	EPA 8260B	6/18/05	98.8	93.6	5.42	70-130	25

Approved By: Joe Kiff

Report Number : 44359

QC Report : Laboratory Control Sample (LCS)

Date : 6/24/2005

Project Name : PICO

Project Number : NC-24

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	6/17/05	103	70-130
Toluene	40.0	ug/L	EPA 8260B	6/17/05	100	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/17/05	94.2	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/17/05	94.9	70-130
Benzene	40.0	ug/L	EPA 8260B	6/17/05	98.5	70-130
Toluene	40.0	ug/L	EPA 8260B	6/17/05	101	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/17/05	99.8	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/17/05	79.8	70-130
Benzene	40.0	ug/L	EPA 8260B	6/18/05	99.6	70-130
Toluene	40.0	ug/L	EPA 8260B	6/18/05	103	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/18/05	105	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/18/05	95.0	70-130

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:

Joe Kiff





2795 2nd Street, Suite 300  
Davis, CA 95616  
Lab: 530.297.4800  
Fax: 530.297.4808

Lab No. 44359

Page 1 of 2

Project Contact (Hardcopy or PDF To):

*Andrew Locicero*

Company/Address: Blue Rock Env. Inc.,  
535 3rd St. Ste. 100 Eureka, CA

Phone No.: (707) 441-1934 FAX No.: (707) 441-1949

Project Number: NC-24 P.O. No:

Project Name: PICO

Project Address:  
2160 Central Ave.  
McKinleyville

Sample Designation

Sample Designation	Sampling		40 ml VOA SLEEVE	Container	Preservative	Matrix	Analysis Request		TAT
	Date	Time					BTEX (8021B)	EDTA/TPH Gas/MTBE (8021B)/MB015) TPH as Diesel (MB015) <i>S / get clean up</i>	
MW-1	6/14/05	11:40	6		X X	X	X	X	X 01
MW-2		12:05							1 02
MW-3		12:25							03
MW-4		12:45							04
MW-5		13:05							05
MW-6		13:25							06
MW-7		14:25							07
MW-8		13:45							08
MW-9		15:30							09
MW-10	↓	15:50	↓		↓	↓	↓		↓ 10

Relinquished by:

*James Linderman* Date 6/15/05 Time Received by: Fed Ex

Remarks:

Sample Receipt

Temp °C 4 Therm. ID# 3

Initial *JLT*

Date 26/6/05 Time 1226

Coolant present: Yes No

Relinquished by:

Date Time Received by:

Bill to:

Date 26/6/05 Time 1226 Received by Laboratory: KIFF Analytical

Distribution: White - Lab, Pink - Originator

Forms/coc 121001.fh9



2795 2nd Street, Suite 300  
Davis, CA 95616  
Lab: 530.297.4800  
Fax: 530.297.4808

Lab No. 44359

Page 2 of 2

Project Contact (Hardcopy or PDF To):

Andrew Locicero

Company/Address: Blue Rock Env. Inc.  
535 3rd St. Ste. 100 Eureka, CA

Phone No.:

(707)441-1934

FAX No.:

(707)441-1949

Project Number:

NC - 24

Project Name:

PICO

Project Address:

2160 Central Ave.  
McKinleyville

**Sample Designation**

MW - 11

MW - 12

California EDF Report?  Yes  No

Recommended but not mandatory to complete this section:

Sampling Company Log Code: - - -

Global ID:

T-0-6-0-2-3-0-0-4-9-1

EDF Deliverable To (Email Address):

andrew@bluerockenv.com

Sampler Signature:

James Linderman

**Sampling**

Container

Preservative

Matrix

Date

Time

40 ml VOA  
SLEEVE

HCl

HNO<sub>3</sub>

ICE

NONE

WATER

SOIL

BTEX (B2C1B)

BTEX/TPH Gas/MTBE (B2C1B/M8015)

TPH as Diesel (M8015) *S/ gel clear up*

TPH as Motor Oil (M8015)

TPH Gas/BTEX/MTBE (B260B) */5030*

5 Oxygenates/TPH Gas/BTEX (B260B)

7 Oxygenates/TPH Gas/BTEX (B260B)

5 Oxygenates (B260B)

7 Oxygenates (B260B)

Lead Scav. (1.2 DCA & 1.2 EDB - 8260B)

EPA 8260B (Full List)

Volatile Halocarbons (EPA 8260B)

Lead (7421/239.2) TOTAL (X) W.E.T. (X)

TAT

12 hr/24 hr/48 hr/72 hr/*wk*

For Lab Use Only

**Chain-of-Custody Record and Analysis Request**

**Analysis Request**

Relinquished by:

James Linderman

Date

6/15/05

Time

Received by:

Fed Ex

Remarks:

Relinquished by:

Date

Time

Received by:

Relinquished by:

Date

06/16/05

Time

1226

Received by Laboratory:

KIFF Analytical

Bill to:

NORTH COAST UNIFIED AIR QUALITY MANAGEMENT  
DISTRICT

**AUTHORITY TO CONSTRUCT**

**NAC-380**

**BLUE ROCK ENVIRONMENTAL, INC.  
FOR  
LOUISE PIERSON REVOCABLE TRUST**

**LEGAL OWNER OR OPERATOR:** LOUISE PIERSON REVOCABLE TRUST  
1200 W. Harris St.  
Eureka, CA  
Responsible official: Doreen Megli  
Phone: 707-268-1800

**CONTRACTOR:** BLUE ROCK ENVIRONMENTAL, INC.  
535 Third Street, Suite 100  
Eureka, CA 95501  
Responsible official: Andrew LoCicero  
707-441-1934

**BUSINESS ACTIVITY:** Groundwater Remediation via Vapor Extraction

**EQUIPMENT LOCATED AT:** The project is located in the northwestern portion of California within the County of Humboldt, at 2160 Central Avenue, McKinleyville, CA.

Whereas application for an Authority to Construct has been made by Blue Rock Environmental, Inc. on behalf of the Louise Pierson Revocable Trust (hereinafter called the Permittee) pursuant to Regulation 3 of the Rules and Regulations of the North Coast Unified Air Quality Management District (hereinafter called the District), and said application has been reviewed and considered by the Air Pollution Control Officer of said District (hereinafter referred to as the Control Officer or NCUAQMD).

This is your Authority to Construct and Temporary Permit to Operate (hereinafter called PERMIT) subject to the following terms and conditions:

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<b>Abbreviations</b>	<b>3</b>
<b>Permit Units</b>	<b>Permit No.</b>
<b>A. Gasoline Station</b>	
(1) Vapor Extraction System	NAC-380
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## LIST OF ABBREVIATIONS

CARB	California Air Resources Board
CFM	cubic feet per minute
CFR	Code of Federal Regulations
District	North Coast Unified Air Quality Management District
EPA	Environmental Protection Agency
gpm	gallons per minute
LEL	lower explosive limit
OSHA	Occupational Safety and Health Administration
SCFM	standard cubic feet per minute
TPH	total petroleum hydrocarbons

## PERMIT UNITS

### A. Vapor Extraction System

#### (1) Permit Number - NAC-380

- I. **BASIC EQUIPMENT** - The project consists of the installation and operation of a groundwater vapor extraction system intended to remove gasoline and diesel which have leaked from underground fuel tanks and dispensers. Five 20 foot deep vapor extraction wells and six 25 foot deep air sparge wells will be constructed to provide access to the contaminated soil and groundwater. The vapor extraction wells will be connected with piping to a Solleco 250 CCAT 250 scfm electric catalytic oxidizer at the remediation compound. The air sparge wells will be connected with piping to an air injection manifold located at the remediation compound. The operation will consist of balancing the input sparge pressure with the exit vacuum pressure of the soil vapor extraction blower to maximize the underground sparge vapor capture and subsequent oxidation of contaminants at the surface.

### II. EMISSIONS LIMITATION

Emissions shall not exceed the emission limits in the following table:

SUMMARY OF EMISSION LIMITS					
Pollutant	ppmv	Ibs/hr	Ibs/day	tons/yr	Regulation
TPH(g)	3569	9.13	219.12	39.99	NSR/PSD
Benzene	0.138	0.00250	0.06008	0.01096	Hot Spot
Toluene	2.4	0.05142	1.23411	0.22523	Hot Spot
Ethylbenzene	2.74	0.06754	1.62106	0.29584	Hot Spot
MTBE	0.069	0.00141	0.03395	0.00620	Hot Spot
Xylene	11.61	0.28620	6.86880	1.25356	Hot Spot

### III. COMPLIANCE MONITORING

- A. No less than 15 minutes after start-up, the Permittee shall:

- Analyze exhaust gas stream to determine the flow rate and concentration of benzene, toluene, ethylbenzene, MTBE, xylenes, and TPHg present for each of the first four days of operation and before shutdown periods.

- B. After the initial testing required by A.1. is complete, the permittee shall analyze the exhaust gas to determine the concentration of benzene, toluene, ethylbenzene, MTBE, xylenes, and TPHg present 1) once per week and 2) before shutdown periods.

- C. The permittee shall calculate the benzene, toluene, ethylbenzene, MTBE, xylenes, and TPHg emission rate in pounds per hour based on the exhaust gas analysis and the operating exhaust flow rate. The air sparge and soil vapor extraction flow rates shall be decreased, if necessary, to demonstrate compliance with the emission limits in Section II.

- D. The permittee shall submit the test results and emission calculations to the District within one month of the testing date. Samples shall be analyzed according to modified EPA test method TO-14 or equivalent to determine the concentrations of benzene, toluene, ethylbenzene, MTBE, xylenes, and TPHg.

**IV. REPORTING AND RECORDKEEPING** - see also General Provisions, section F.

A. The Permittee shall submit to the District within 30 days of the end of each month the following records for each month of operation of the source:

1. Days and hours of operation.
2. Each emission test, analysis or monitoring results logged in for the day of operation they were taken.

B. Any noncompliance with conditions must be reported to the District at the time it was discovered. The submittal shall include the data showing the exceedence as well as the time of occurrence.

## **GENERAL PROVISIONS**

These general provisions apply to all facilities or sources owned or operated by the permittee as detailed in this permit.

**A. Permit Validity** – This authority to Construct Permit is valid from the date of issuance until a permit to operate for the equipment for which the application was filed is granted or denied or the application is canceled. In the event a permit to operate is not issued within one (1) year from the effective date of this permit, the permit to operate shall be deemed denied. Notwithstanding, upon written request to the APCO, this Authority to Construct permit may be extended by written authorization of the APCO.

**B. Fee Payment** - The Permittee shall pay an annual permit fee as required in accordance with Regulation 3, Rule 1-300 of the District. Failure to pay these fees will result in forfeiture of this Permit. Operation without a permit subjects the source to potential enforcement action by the District.

**C. Fee Payment** - The Permittee shall pay an annual permit fee as required in accordance with Regulation 3, Rule 1-300 of the District. Failure to pay these fees will result in forfeiture of this Permit. Operation without a permit subjects the source to potential enforcement action by the District.

**D. Inspection and Entry** - Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the District or an authorized representative to perform the following:

1. Enter upon the permittee's premises where a regulated facility or emissions-related activity is located or conducted, or where records must be kept under the conditions of this permit.
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.
3. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
4. Sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the conditions of this permit.

### **E. Facility Operation**

1. Operation under this permit must be conducted in compliance with all data and specifications included in the application which attest to the operator's ability to comply with District Rules and Regulations.
2. All equipment of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions.

### **F. Compliance**

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Regulation 1 of the District and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of an application for re-issuance of the permit.

2. The need to halt or reduce activity is not a defense. It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. The permittee shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the District copies of records required to be kept by this permit.

**G. Severability** - If any term or condition of this permit shall for any reason be adjudged by a court of competent jurisdiction to be invalid, such judgment shall not affect or invalidate the remainder of this permit.

**H. Recordkeeping and Reporting**

1. The permittee shall retain records of all required monitoring data and support information for a period of at least one (1) year from the date of the sample, measurement, report, or application. Support information includes all maintenance records, and copies of all reports required by this permit.

2. The permittee shall report to the District any deviations from these permit requirements, including those attributable to breakdown conditions, the probable cause of the deviations, and any corrective actions or preventive measures taken. Procedures of Regulation 1, Rule 540 shall be followed in the reporting of such deviations. A breakdown log shall be maintained for recordkeeping purposes[Regulation 1, Rule 540].

**I. Transfer of Ownership** - In the event of any changes in control or ownership of these facilities, this permit together with its terms and conditions shall be binding on all subsequent owners and operators. This permit is not transferable from one person to another unless such transfer is made through the District. The permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, a copy of which shall be forwarded to the District. [Regulation 1, Rule 240(j)]

**J. Reopening for Cause** - This permit may be modified, revoked, reopened, reissued, or terminated for the following reasons:

1. The filing of a request by the permittee for a permit modification, revocation and re-issuance, or termination, or of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

2. The District determines that the permit contains a material mistake made in establishing the emissions standards or limitations, or other requirements of the permit.

3. The District determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

**K. Property Rights** - This permit does not convey any property rights of any sort, or any exclusive privilege.

**L. Permit Modification** - The permittee shall submit an application for any changes to the basic or control equipment for any permit unit in this permit.

**M. Prohibitions** - These limitations apply to all emissions sources at the permittee's facility unless more specific and limiting requirements are listed for an individual permitted emissions unit in this permit.

- 1. Public Nuisance** - The permittee shall not discharge such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have an natural tendency to cause injury or damage to business or property.[H&S 41700]
- 2. Circumvention** - The permittee shall not construct, erect, modify, operate, or use any equipment which conceals an air contaminant emission, which would otherwise constitute a violation of the limitations of this permit, unless the operation or use of said equipment results in a significant reduction in the total emission of air contaminants.[Rule 400(b)]
- 3. Regulation 2, Open Burning Procedures** - The permittee shall not ignite or cause to be ignited or suffer, allow or maintain any open outdoor fire for the disposal of rubber, petroleum or plastic wastes, demolition debris, tires, tar paper, wood waste, asphalt shingles, linoleum, cloth, household garbage or other combustible refuse; or for metal salvage or burning of motor vehicle bodies except as provided in Rule 2-102, Exemptions.

**THIS PERMIT BECOMES VOID UPON ANY ALTERATION OF EQUIPMENT**

This permit does not authorize the emission of air contaminants in excess of those allowed by the Health and Safety Code of the State of California or the Rules and Regulations of the North Coast Unified Air Quality Management District as stated in this permit. This permit cannot be considered as permission to violate existing laws, ordinances, regulation or statutes of other governmental agencies. The violation of any of these terms and conditions shall be grounds for revocation of this permit, and shall be a violation of District Rules and Regulations.

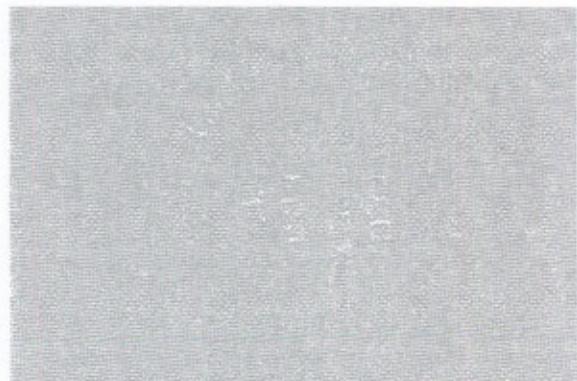
**NORTH COAST UNIFIED  
AIR QUALITY  
MANAGEMENT DISTRICT**

2300 MYRTLE AVENUE                   PHONE (707) 443-3093  
EUREKA, CALIFORNIA 95501           FAX (707) 443-3099

DATE: 7/15/04

BY: Dave Wunker

DAVE WUNKER,  
AIR QUALITY SPECIALIST III  
for  
LAWRENCE ODLE,  
AIR POLLUTION CONTROL OFFICER



Permit Seal